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Atmospheric Propagation Analysis Program

Final Report

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ADMINISTRATIVE INFORMATION

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EXECUTIVE SUMMARY

OBJECTIVE

The main objective of the Atmospheric Propagation Analysis (APA) is the optimum selection of the "best" thermal-imaging system for the Photonics Mast System. This program is part of the much broader Photonics Mast Program Trade-Off Analysis. The APA program is funded under the Photonics Mast Program by Program Executive Officer — PMO 401. The objective of this report is to quantify the atmospheric effects via atmospheric transmittance measurements in the 3- to 5-micron and 8- to 14-micron wavelength regions. Since atmospheric transmittance in these two wavebands can have a dramatic effect on overall thermal-imaging system performance, the atmospheric transmittance measurements were to occur under as many different and varied atmospheric conditions as possible over a typical periscope-imaging environment, for example, over 1- to 3-kilometer optical pathlengths and with sensor heights of 6 inches to 3 feet off the surface of the ocean. In this manner, it was hoped that the aerosol effects close to the surface of the water could be inferred and quantified from the resulting atmospheric transmittance measurements. The resulting detectors could then be band optimized, which is not being extensively performed. A secondary objective is to qualify the differences in image quality resulting from the two different classes of FLIR systems: Staring Focal Plan Arrays (SFPA) and Standard Parallel/Serial Scanning Arrays. To meet these overall program objectives, the APA program was divided into three experiments to be performed simultaneously:

1. The objective of Experiment 1 — the measurement of atmospheric transmittance — is to quantify the atmospheric propagation losses (and infer the amount and type of aerosol effects) throughout the entire 2.5- to 14.5-micron infrared waveband. This is accomplished using two large 1000°C blackbody sources and a calibrated infrared spectroradiometer. The atmospheric transmittance measurements were performed under varied atmospheric conditions over typical periscope-imaging geometries, for example, with sensor heights of 0 to 3 meters.

2. The objective of Experiment 2 — the thermal-imaging system measurement of Minimum Resolvable Temperature Difference (MRT) — is to qualify the resulting image quality differences that result from side-by-side MRT measurements of a 3- to 5-micron SFPA and an 8- to 14-micron scanning SPRITE detector array over the same atmospheric path as the atmospheric transmittance measurements. This relates the atmospheric transmittance measurements to realtime thermal imagery and allows qualitative analysis of image degradation through losses in the atmosphere. This also allows analysis of how the image quality differs under varied atmospheric conditions in the two thermal-imaging systems. A secondary objective of this experiment is to quantitatively perform MRT measurements in the field over a typical periscope-imaging path. This experiment was performed using two standard, off-the-shelf, commercial thermal-imaging systems and a 4-foot by 8-foot blackbody water tank.

3. The objective of Experiment 3 — the weather station measurements — is to measure and record various meterological parameters on-site as the transmittance data from Experiment 1 and the MRT data from Experiment 2 are being collected. Two 12-foot high, stand-alone, fixed weather stations are utilized to record pressure, temperature, relative humidity, wind speed, and wind direction, at 5-minute intervals, 24 hours a day. Sea surface temperatures and air surface temperatures are also recorded. Local radiosonde data are also obtained from sources that are included in the Naval Oceanography Command's Summary of Synoptic Meterological Observations (SSMO) database. The goals of Experiment 3 are the following: (1) to collect accurate radiosonde data for input to LOWTRAN codes for direct comparison and validation of the predictions of atmospheric transmittance versus those measured in Experiment 1 and (2) to analyze this resulting database and possibly derive bulk atmospheric and aerosol effects correlations with that of the actual atmospheric transmittance measurements.

RESULTS

Given the funding and time constraints of the Photonics Mast Program, only two APA deployments were performed. The first APA deployment was performed in February 1992 at the Naval Air Station in Adak, Alaska. This site was chosen from the APA Test Criterion Analysis to exhibit cold and arid atmospheric effects (>50° latitude operational area test site), which included cold, clear, low and high wind speeds, as well as cold, rough, snow, sleet, and rain conditions. During the two-week deployment, rough weather conditions were not encountered. Review of the data does show that APA data were collected under cold, arid, and snow conditions, but wind speeds were seldom greater than 12 knots. The second APA deployment was performed in September 1992 at the Naval Air Station in Pensacola, Florida. This site was also chosen from the APA Test Site Criterion Analysis to exhibit hot and humid atmospheric effects. During the two-week deployment, temperature in excess of 23°C and relative humidities in excess of 87% were frequently encountered. The atmospheric conditions encountered during these two APA deployments represented the extremes of possible atmospheric conditions that are expected to influence thermal-imaging performance the most, for example, very low precipitable water content (2 to 5 mm/km) and very high precipitable water content (20 to 25 mm/km). It was unfortunate, however, that the APA data were not collected with high aerosol content and other atmospheric obscurants. The results of the APA experients and analysis are summarized below.

Experiment 1 Results: The APA transmittance runs from Adak were fairly flat across both wavebands, with only minor fluctuations. The APA transmittance values for the Pensacola runs, however, were not flat across the two wavebands. There were many fluctuations across both wavebands. The two locations showed noticeable differences in the beginning and ending of a waveband. Most of these wavelength shifts can be explained by inferring differences in the atmospheric constituent absorber amounts for the two vastly different locations; however, the amount and levels of this "banding" is surprising.

APA Adak Experiment 1 Results: Under the atmospheric condition of very low precipitable water content (2.7 to 4.7 mm/km) and under various forms of cold precipitation (rain, light snow, and heavy snow), the atmospheric transmittance in the 3- to 5-micron and 8- to 14-micron wavebands is very high (above 90%) and there is no appreciable difference in atmospheric transmittance between the two bands. For example, on a clear day (precipitable water content = 4.7 mm/km) in Adak on 20 February 1992, the average transmittance over the 3.479- to 3.995-micron waveband is 94%. At 4.612 microns, the atmospheric transmittance is 83%, and over the 8.969- to 11.498-micron waveband the average atmospheric transmittance is 92%. For the case of a light snowfall on 23 February 1992, the transmittance values decrease slightly when compared to those of a clear day, but the difference in average atmospheric transmittance values between the two wavebands stays relatively the same. For the light snowfall, the average transmittance over the 3.479- to 3.995-micron waveband drops to 75%, 4.612 microns drops to 69%, and the 8.969- to 11.498-micron waveband drops to 70%. Under the atmospheric and meterological conditions encountered in Adak, one waveband did not have a higher average atmospheric transmittance than the other. It should be noted that during the heavy snow data run (Tran 6508), the transmittance values dropped to 12% in the "white-out" condition, but with a visibility of 6 feet, the transmittance values were 70%.

APA Pensacola Experiment 1 Results: Under the atmospheric conditions of very high precipitable water content (18.4 to 23.3 mm/km), the atmospheric transmittance in the 3- to 5-micron waveband is 25% to 30% higher than the 8- to 14-micron waveband. For example, on the day of the highest precipitable water content (23.3 mm/km), 22 September 1992, the average transmittance over the 3.016- to 3.247-micron waveband is 36%. For the 3.479- to 3.621-micron waveband, the average transmittance increases to 85%. The transmittance continues to rise over the 3.639- to 3.994-micron waveband to 90%. At 4.612 microns, the transmittance falls to 67%. Over the 8.969- to 9.601-micron waveband, the average transmittance decreases to 60% and continues to drop to 59% over the 9.659- to 12.01-micron waveband.

Experiment 2 Results: The atmospheric path MRT measurements and image quality results followed the same trends as the transmittance measurements. As the atmospheric transmittance decreased, the MRTs increased and the image quality degraded. The image quality results also indicate that by taking into account the difference in field-of-views and magnifications of the two tested FLIR systems, the shot noise seems to be present in both FLIR systems. On the whole, the noise levels in the 8- to 14-micron FLIR systems are higher. The results of the MRT measurements performed over these APA atmospheric paths using the APA blackbody tank did not work as well as was anticipated. Sun-loading problems in both Adak and Pensacola lead to gradients across the tank; these gradients were as large as the delta Ts that were being measured. Although much was learned in this

experiment, the image quality analysis proved more useful than the MRT measurements.

Experiment 3 Results: A complete meterological database for both APA test sites was compiled and is provided in the appendices of this report. When compared to the actual measured atmospheric transmittance values, the results of the validation of the LOWTRAN code predictions of atmospheric transmittance were not encouraging. In the APA test in Adak, the LOWTRAN 7 - No Aerosol Model showed good agreement with only a 2.9% difference. For the Pensacola data, however, the LOWTRAN 7 predictions differed by as much as 20% to 30%.

RECOMMENDATIONS

Given the two extremes in precipitable water content that occurred during these two APA deployments, the following conclusions can be drawn: (1) For very low precipitable water content (2.7 to 4.7 mm/km) atmospheric conditions, which are typically encountered in the winter at latitudes greater than 40°N, the atmospheric transmittance in both wavebands is very high (in excess of 90%), and thus, there is no appreciable difference in atmospheric transmittance; (2) For very high precipitable water content (18.4 to 23.3 mm/km) atmospheric conditions, which are typical of the South Pacific, the atmospheric transmittance in the 3- to 5-micron waveband can be as much as 25% to 30% higher than in the 8- to 14-micron waveband. Submarines typically operate in both of these areas, as well as areas that have precipitable water content values between the two extremes. The APA data support the recommendation that a high-performing, 3- to 5-micron SFPA FLIR system may be the "best" choice FLIR system for the Photonics Mast System.

The APA analysis also shows that there is much fluctuation of transmittance inside each of the two wavebands under consideration. This fluctuation may be very important to the manufacturing of the Photonics Mast when performing the FLIR system trade-off analysis. Although it is not commonly performed in the commercial FLIR market, some tailoring of the detector's wavelength response inside these bands may — according to the APA data — yield better resulting performance than running with no filtering. By decreasing the wavelength bandwidth, overall detectivity of the detector will go up. By employing discrete band filters and correct doping of the infrared detector, a slight increase in performance may be possible. This analysis should be kept in mind throughout the selection of the "best" detector.

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1.0 INTRODUCTION

1.1 OBJECTIVE

1.1.1 Atmospheric Propagation Analysis

The Atmospheric Propagation Analysis (APA) Program is funded under the Photonics Mast Program by Program Executive Officer, Submarine Combat and Weapons Systems Group PMO 401. The objective of the APA program is the optimum selection of a FLIR system that meets all of the required performance requirements of the Photonics Mast System. Since atmospheric propagation in these two different wavebands has a dramatic effect on the overall FLIR system performance in the field, this analysis will quantify the atmospheric propagation losses in these two infrared wavebands. The objective of this analysis is to

a. Quantify the atmospheric propagation losses throughout the entire infrared spectrum, given the special atmospherics of imaging through typical submarine periscope-imaging geometries and conditions, for example, by imaging through the first 3 meters (0- to 3-meter sensor heights) off the surface of the ocean.

b. Predict the relative performance differences for the 3- to 5-micron SFPAs and those of the more common 8- to 14-micron scanning arrays by the analysis of the above transmittance data, by the analysis of side-by-side Minimum Resolvable Temperature (MRT) measurements of these FLIR systems during this atmospheric testing, and finally by organizing and coordinating this data with collected meteorological data.

c. Validate LOWTRAN 6 and LOWTRAN 7 predictions of transmittance for the conditions encountered during the actual measurements.

d. Incorporate these conclusions into the Photonics Mast Program's Procurement cycle.

1.1.2 Background

Thermal-imaging systems have been incorporated into submarine periscope systems since the mid-seventies. The next generation U.S. Navy periscope system will be the non-hull penetrating "Photonics Mast" system, which will incorporate a thermal-imaging system in its suite of sensors. To date, a 24-hour surveillance capability for submarine periscopes has been restricted to forward-looking infrared (FLIR) sensors that operate in the 8- to 12-micron wavelength (long wave) region. This restriction was an artifact of the FLIR technologies of the time as related to the system performance requirements. Historically, restrictions in FLIR performance in the submarine periscope-imaging environment have been dominated by degradations that occur largely due to atmospheric transmittance, aperture size, detector design, and sensitivity. The latter three characteristics are inherent in any FLIR system design and can be easily predicted. Degradation due to the intervening atmosphere is a much more difficult phenomenon to gauge and to optimize,

given the number and dynamics of different atmospheric conditions encountered, especially at the ocean surface.

1.1.3 FLIR Performance at the Air-Water Interface

Extensive data have been taken in this harsh environment on the operation and performance achieved with 8- to 12-micron FLIR systems operating along typical submarine periscope-imaging geometries. Quite often the resulting imagery is severely degraded. The image degradation usually manifests itself as reduced resolution imagery-through- target contrast reduction; for example, degradation is one of reduced resolution and sensitivity. Recent advances in 3- to 5-micron staring-focal plane arrays (SFPA) and other 3- to 5-micron detector arrays have produced (middle wave) FLIR systems with performance that exceeds the performance of the current long-wave, parallel-, and serial-parallel-scanning FLIR systems. Laboratory measurements have shown that better than an order of magnitude improvement in system minimum-resolvable-temperature difference (MRT) and system noise-equivalent-temperature difference (NEΔT) is achievable in 3- to 5-micron SFPAs over our *best* 8- to 12-micron scanning FLIR systems (both with comparable optics).

Another advantage of 3- to 5-micron SFPAs over 8- to 12-micron scanning arrays is their optimized form-fit considerations for the physical geometries and size constraints special to submarine periscopes. The integration of a 3- to 5-micron SFPA into a submarine periscope is very desirable due to this enhanced sensor performance, and to the fact that the same resolution as the 8- to 14-micron FLIR can be achieved with half the aperture size. All these facts suggest that the 3- to 5-micron SFPA FLIR is now the *best* system to incorporate into the Photonics Mast System; however, one very important consideration has yet to be fully addressed: the intervening atmosphere. Unlike the long-wave FLIR system, the 3- to 5-micron FLIR systems have not been extensively tested in both operation and performance achieved over typical submarine-imaging geometries and environments. Atmospheric propagation in the 3- to 5-micron waveband over typical submarine-imaging geometries is still largely unknown and must be studied before this final step is taken.

2.0 TECHNICAL APPROACH

2.1 HISTORICAL PERSPECTIVE

Severe image degradation has been encountered in the past with 8- to 14-micron FLIR systems. Recent advances in the 3- to 5-micron staring focal plane arrays enhanced with Platinum-Silicide Schottky Barrier design have produced FLIR systems that exceed the performance of the current parallel and serial-parallel scanning FLIR systems in the laboratory. The integration of a 3- to 5-micron SFPA into a submarine periscope is very desirable due to this enhanced sensor performance, and the fact that the same resolution as the 8- to 14-micron FLIR can be achieved with half of the aperture size. Recent advances in the fabrication of high system sensitivity and high resolution (256 × 256 pixel

and 512 × 640 pixel) staring- and scanning-focal plane arrays have re-opened the longstanding system trade-off analysis of employing an 8- to 12-micron FLIR system versus a 3- to 5-micron FLIR system in submarine periscope-imaging environments. Performance of an 8- to 12-micron FLIR system in the submarine periscope-imaging environment is known and documented, but that of a 3- to 5-micron FLIR system in this environment is relatively unknown. Many of these new high performing detector arrays operate in 3- to 5-micron, 8- to 12-micron wavelength regions, or both, so the common response to this problem is why not use both bands. Physical size constraints, overall system stealth and observability are the primary issues against the dual-band FLIR solution. Another problem with the dual-band FLIR approach is that a dual-band FLIR system often requires that one of the two bands be optimized at the expense of the other band's performance. Experience has shown that optimum performance must be inherent in each band to be fully useful; thus, a dual-band FLIR system is not the *best* approach for submarine periscope-imaging environments. Each of the above conditions seem to support the idea that a 3- to 5-micron FLIR system would now be the *best* choice for an infrared submarine periscope system; however, atmospheric propagation in the 3- to 5-micron waveband over typical submarine-imaging geometries is still largely unknown, and the question of how it performs must be answered before this final step is taken.

At present, there is a lack of published papers involving actual infrared, atmospheric transmittance measurements. The bulk of the work performed in this area has been done in prediction modelling of atmospheric transmittance in the infrared wavebands. The two classical works involving infrared atmospheric transmittance measurements are published papers by Taylor and Yates (reference 1) and Streete (reference 2). The bulk of the work performed in computer modelling of atmospheric transmittance and radiance is found in the multiple versions of LOWTRAN and FASCODE computer codes published by Kneizys, Shettle, et al. (reference 3) and by Clough, Kneizys, et al. (reference 4) at the Air Force Geophysics Laboratory–Hanscom Air Force Base, Massachusetts. The differences between these two computer codes is in the spectral resolution of the lookup tables. LOWTRAN has moderate spectral resolution, for example, at 5- to 10-wavenumber increments, while FASCODE is primarily for the prediction of laser-line atmospheric transmittance and is thus to subwavenumber accuracies. The validation and extension of the LOWTRAN codes have been the basis of many papers in this field. References 5 to 12 represent just a few works that attempt to validate the LOWTRAN code via various methodologies. These works are based on analytical techniques and comparison with actual radiance/transmittance measurements. References 5, 9, 10, and 11 form the basis of this APA LOWTRAN Comparison Analysis. They identify the problems typical with this type of comparison analysis. The APA LOWTRAN Comparison Analysis shows both the problems that occur with the special submarine periscope-imaging geometries of a near-horizontal optical path close to the ocean surface and the problems associated with the layering of the radiosonde data inputs. The goal of this APA analysis will be the comparison of the LOWTRAN predicted data, given the atmospheric and meteorological conditions which occurred during the APA deployments, with that of the APA measured transmittance values. This APA comparison analysis of these specific optical paths over these close to the ocean surface sensor heights may be the first of its kind.

2.2 GENERALIZED ATMOSPHERIC PROPAGATION ANALYSIS THEORY

The subject of atmospheric optical effects was revived in the seventies and received considerable attention in the major technical journals as a result of the development and practical use of laser systems. Of course, this subject has its foundation in the many works published after the second world war, when the studies were primarily to account for the observed visual imagery degradation effects. In the fifties, fundamental radiative transfer theory was applied to the infrared wavebands. With works like Taylor and Yates (reference 1), actual measurements of atmospheric transmission in the infrared were performed; and subsequently, atmospheric models could be developed and validated. From basic radiative transfer theory, the main factors that degrade the performance of image-forming systems are absorption, scattering by particles, and the effects resulting from atmospheric turbulence.

Figure 1 shows an overview of the different types of atmospheric effects that combine to influence the resulting performance of image-forming electro-optical systems. Each of the atmospheric effects has its foundation in one or more of the three factors mentioned above. These factors are found to be wavelength dependent; therefore, investigation into the wavelength regions of particular concern must be performed. Each of these factors will be addressed in detail in the following sections, but it should be noted that it is the combination of these factors that defines the intervening atmosphere and the corresponding atmospheric degradation effects in the resulting imagery. It is the old story, that you can have the *hottest* sensor in the world, but if you cannot see through the intervening atmosphere, then you really have not accomplished much.

The main purpose of this paper is to summarize the relevant aspects of the radiative transfer theory that describes atmospheric transmission in the infrared wavelength regions and to identify the main factors that degrade the performance of thermal-imaging systems. Infrared radiation is attenuated as it passes through the Earth's atmosphere. This attenuation process is composed of a series of sub-processes, such as molecular absorption and molecular scattering by the simple atmospheric gas molecules, absorption and scattering by naturally occurring molecular clusters (for example, aerosols, rain, snow, and fog particles), absorption and scattering by naturally occurring and man-made suspension particles (for example, smoke, dust, sand, salt particles, smog, and haze), the dynamics, as each of these sub-processes compete with each other at all the local sites, summed up through the entire pathlength. The amount and effect of each sub-process at each local event along the entire path are often much too difficult to determine. Fortunately, bulk atmospheric effects quite often tend to force some of these sub-processes to dominate in effect and form. Fairly accurate descriptions and predictions of this attenuation process over distinct pathlengths can then be determined. The special imaging geometries and atmospherics chosen for this paper only compound the determination of each of these competing sub-processes; for example, at the air–ocean interface the dynamics can be such that normal descriptions and predictions of the attenuation process tend not to be precise.

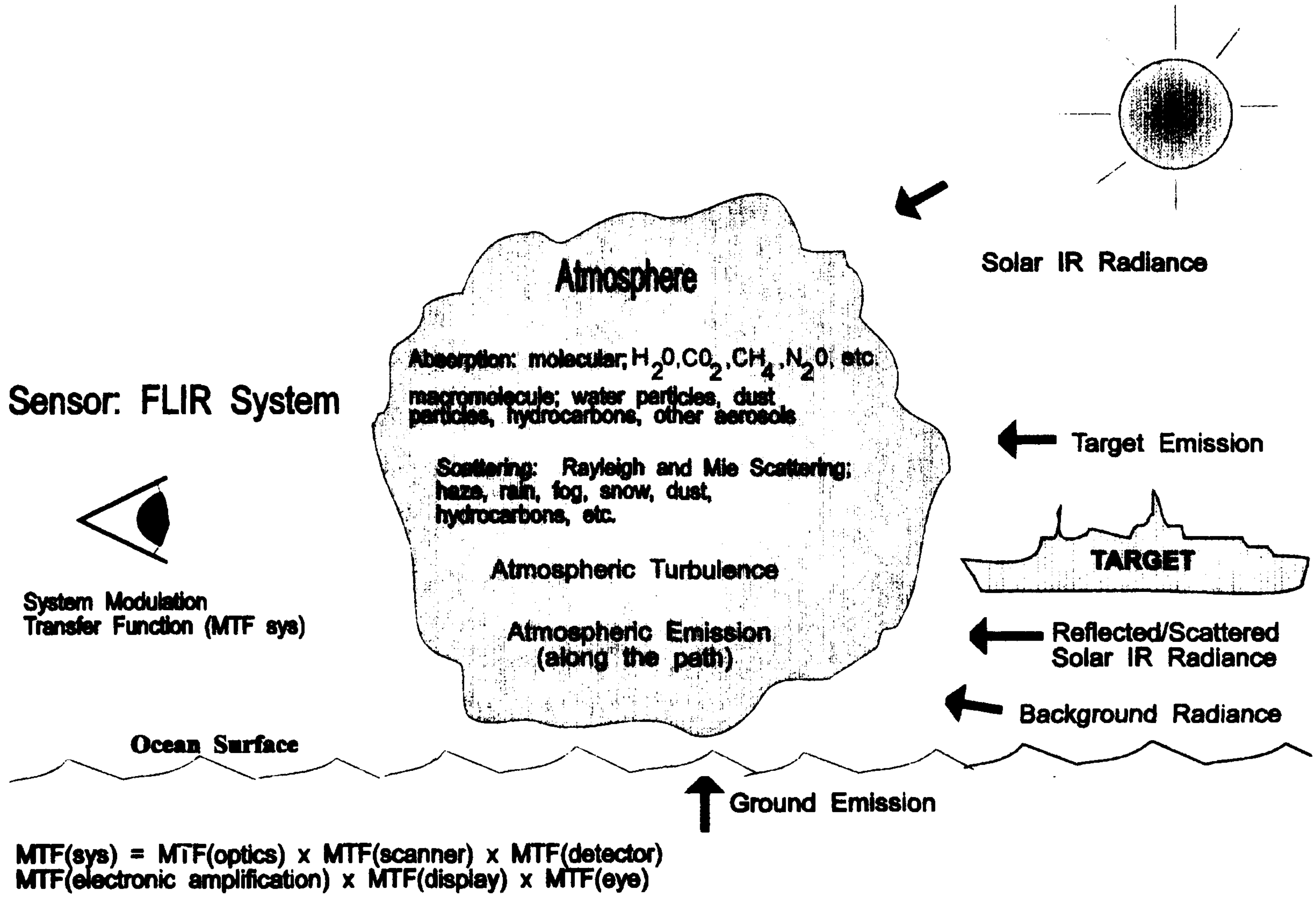


Figure 1. Infrared atmospheric radiative transfer effects.

The general process which is commonly used to describe how radiant flux is attenuated by its passage through an atmosphere is called *extinction* e. The transmittance along any particular pathlength can be expressed as

$$e^{-\sigma x} \tag{1}$$

where σ is called the *extinction coefficient* and x is the pathlength. As discussed, often a number of the sub-processes described above contribute to this overall extinction factor, so that σ is usually expressed as

$$\sigma = \sigma_a + \sigma_s \tag{2}$$

where σ_a is the *absorption coefficient* and describes the total absorption processes, and σ_s is the *scattering coefficient* that describes the total scattering processes. Both σ_a and σ_s are wavelength dependent, given that they are very dependent on the particle size and particle number densities found to occur at each of the local sites all along the pathlength that serve to identify which of the above-mentioned sub-processes are tending to dominate at these local sites.

The above equations (1 and 2) express the absorption and scattering processes in the most simplistic manner. The actual description of these processes requires the solution of the general radiative transfer equation. This rather complex mathematical equation requires some assumptions to be made in order that some useful solutions can be found and expressed. The derivation of this equation, with many of its solutions, is found in references 13 and 14. We shall use these references, complete with their terminology and their same simplifying assumptions, as our starting point. They first assume a scattering case with a plane-parallel and homogeneously layered atmosphere as shown in figure 2. With these two assumptions, the generalized radiative transfer equation (following figure 2 with an observer at z, looking upward) can be expressed as

$$L_\lambda(\lambda, q, -\mu, \phi) = L_\lambda(\lambda, q_1, -\mu, \phi)\, e^{-(q-q_1)/\mu} + \int_{q_1}^{q} e^{-(q-q')/\mu}\, J_\lambda(\lambda, q', -\mu, \phi)\, \frac{dq'}{\mu} \tag{3}$$

where
- L_λ = spectral radiance
- λ = wavelength
- q_1 = optical depth from any point z_1 to the top of the atmosphere, $z = \infty$
- q = optical depth from an observer at $z < z_1$, so $q > q_1$
- μ = $\cos\theta$

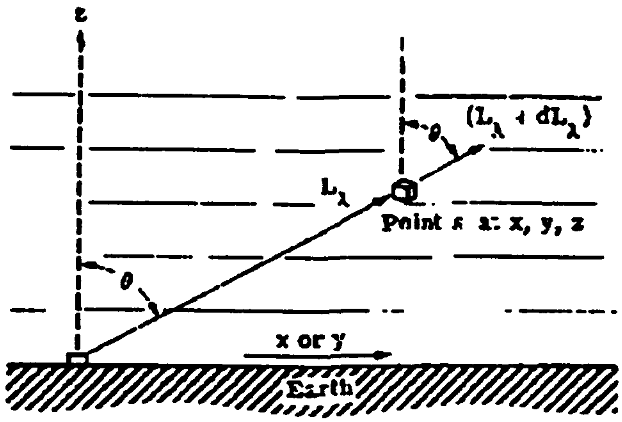


Figure 2. Single scattering case: plane-parallel and homogeneously layered atmosphere.

$$J_\lambda(\lambda, q', -\mu, \phi) = \frac{\omega_0}{4\pi} \int_0^{4\pi} p(\Theta)\, L_\lambda(\lambda, q', \mu, \phi)\, d\Omega + [1 - \omega_0(\lambda)]\, L_\lambda{}^*\, [\lambda, T(z')] + \frac{\omega_0}{4\pi}\, p(\Theta)\, E_\lambda(\lambda, 0, -\mu_0, \phi_0)\, e^{-q'/\mu_0} \tag{4}$$

with $L_\lambda{}^* [\lambda, T(z')]$ = Planck function at z′ corresponding to q′
$T(z')$ = temperature at z′
$E_\lambda(\lambda, 0, -\mu_0, \phi_0)$ = spectral irradiance as a result of the sun at the top of the atmosphere, (q=0), from the direction (θ_0, ϕ_0)

A singularity occurs for horizontal paths, for example, for $\theta = 90°$ ($\mu = 0$), so one must change the coordinates, such, that now the optical path is reversed and values for $90° - \theta$ and the singularity go away. This is an important fact because many of the atmospheric models assume this same initial geometry and have this same singularity. LOWTRAN 6 and LOWTRAN 7 assume this geometry; therefore, this singularity can occur.

2.2.1 Atmospheric Constituents and Their Concentrations

In the infrared wavebands, **molecular absorption** is an ever present source of extinction. To fully understand molecular absorption, one must first understand the Earth's atmospheric constituents present in this absorption process. The Earth's atmosphere is often broken into four concentric regions that are a function of distance above the Earth's surface, but they are more often characterized by the variation of temperature with altitude. These regions are the *Troposphere*, the *Stratosphere*, the *Mesosphere*, and the *Thermosphere*. The **Troposphere**, which normally extends from 0 to 7 miles and is characterized by a decrease in temperature with altitude at approximately 2°C per thousand feet, is also called the lower atmosphere; it is the layer that is analyzed in this report. The other layers must also be addressed, given the various atmospheric properties that affect the lower atmosphere. The effects of the amount of water vapor present, the amount of broadening

of the molecular absorption bands with increasing atmospheric pressure, and the dynamics of the local abundances of the atmospheric constituents are greatest at the air-to-ocean interface (at sea level) and their influences must be considered.

The gases found in the Earth's atmosphere are listed in table 1. Most of these gases are commonly called permanent constituents of the atmosphere since their relative proportions remain approximately constant for altitudes from 0 to 50 miles. The amount of the variable constituent gases varies with temperature, altitude, and location. One of the most important variable constituents, relevant to infrared atmospheric propagation, is water vapor. Water is the only constituent that is observed in more than one physical state; for example, it occurs as a solid in snow and ice crystals; as a liquid in rain, fog, and clouds; as a vapor in the atmosphere. The concentration of water vapor in the atmosphere is very dynamic, but in its worse case, it may have a percent (%) by volume figure of 2.0% for a very humid atmosphere at sea level, and this figure varies drastically with altitude and location. In table 1, the first three gases (nitrogen, oxygen, and argon) do not exhibit any infrared absorption bands; however, N_2 and O_2 (the most abundant) do affect the intensities of the observed absorption bands of the other atmospheric constituents through Lorentz broadening. We will briefly discuss pressure and collision broadening of these other absorption bands in a later section.

Table 1. Gases found in Earth's atmosphere.

Constituent	Symbol	Content (%) by volume	Strong Molecular Absorption band centered on wavelength (microns)
Nitrogen	N_2	78.088	no infrared
Oxygen	O_2	20.949	no infrared
Argon	Ar	0.93	no infrared
Carbon Dioxide	CO_2	0.033	2.7, 4.3, 11.4 - 20
Neon	Ne	1.8×10^{-3}	no infrared
Helium	He	5.24×10^{-4}	no infrared
Methane	CH_4	1.4×10^{-4}	3.31, 6.5, 7.6
Krypton	Kr	1.14×10^{-4}	no infrared
Nitrous Oxide	N_2O	5×10^{-5}	3.9, 4.05, 4.5, 7.7, 8.6, 17.1
Carbon Monoxide	CO	20×10^{-6}	2.3, 4.6
Xenon	Xe	8.6×10^{-6}	no infrared
Hydrogen	H_2	5×10^{-6}	no infrared
Ozone	O_3	variable	4.8, 9.6, 14.2
Water Vapor	H_2O	variable	0.94, 1.1, 1.38, 1.87, 2.70, 3.2, 6.27

As shown in table 1, the average amount of CO_2 by volume in the entire atmosphere is 0.033%. This concentration is approximately constant over time and altitude (for altitudes above 300 feet and less than the *stratopause*) with local variations commonly measured to be less than 10% of this average figure. Given this slight variation of CO_2 concentration, it is generally assumed that the average concentration figure quoted in the above table is a constant over all altitudes above 300 feet. For altitudes below 300 feet, the concentration of CO_2 is not constant, even over a horizontal path. Many phenomenon account for this observed variation of CO_2 close to the earth's surface. One of these phenomenon is the burning of fossil fuels, which has given rise to a gradual increase of

this concentration by about 0.7 to 1.0 ppm per year. The most important factor that effects the concentration amount of CO_2 is a biological effect and it occurs in the biologically active ground layer. The *biological effect*, which can be dramatic, occurs in the first few hundred feet above the earth's surface; it is the variation due to the exchange of CO_2 with soil, vegetation, and the dissolving rate in water. For these first two cases, for example, for paths over ground and vegetation, local and seasonal fluctuations of CO_2 concentrations can range from 200 to 600 ppm. For the APA experiments, a method to collect the distribution of CO_2 over the transmittance path was sought, but unfortunately, this instrumentation was not affordable so it was not measured. From reference 13, the average value of CO_2, given in parts per million by volume, is 320 ppm; whereas, the value used in LOWTRAN is assumed to be a constant at 330 ppm, which is computed assuming a 264 cm/atm concentration over a vertical path from sea level (assuming STP) and a 33 cm/atm concentration over a horizontal path at sea level (assuming STP) per kilometer for all path geometries. This assumption by LOWTRAN may be the source of some of its problems predicting transmittance over the special *periscope* path and will be discussed in more detail later in the report.

All the Noble gases, He, Ne, Ar, Kr, Xe, and Rn, are single-atom molecules and, by definition, are symmetrical molecules that produce no absorption bands in the infrared. They do, however, by their mere presence, affect the intensities of the other atmospheric constituent's absorption bands through Lorentz broadening. Fortunately, this effect is minimal, given their slight abundances. The concentrations of these Noble gases are very uniform throughout the atmosphere, and their concentrations, listed in table 1, are thought to be generally valid to the Stratopause.

In table 1, the next three atmospheric gases that exhibit strong infrared absorption are methane, nitrous oxide, and carbon monoxide. The concentrations of these gases are all more than 2 to 3 orders of magnitude less than the concentration of carbon dioxide; however, these gases do have strong infrared absorption bands and, over significantly long paths, they can influence the resulting infrared transmittance over a long (near ground level) horizontal path. Quite often, these gases, along with carbon dioxide, are called the "fixed gases" since they are all very uniformly mixed from the ground level vertically up through the tropopause. Variations to this assumed constant are discussed below.

The volume mixing ratio of methane CH_4 is approximately 1.6 ppm at ground level (reference 15). The concentration of methane for altitudes up through the tropopause is very uniform and is generally considered to be constant. Above the tropopause, the concentration of methane decreases rapidly in the lower stratosphere. Local perturbations of this volume mixing ratio of methane have been observed in urban and rural areas, but open ocean areas are usually very clean and the value remains constant. LOWTRAN uses 1.6 ppm.

The volume mixing ratio of nitrous oxide N_2O is approximately 0.28 ppm at ground level. Extensive work on measuring the concentration of nitrous oxide, as a function of altitude, has not been performed. Goldman et al. (reference 16) estimates that the

concentration of nitrous oxide drops to 0.14 ± 0.04 ppm for altitudes between 4.5 and 13.5 km. LOWTRAN uses 0.28 ppm.

The volume mixing ratio of carbon monoxide CO is approximately 0.075 ppm at ground level. The concentration of CO for altitudes up through the tropopause is very uniform and is generally taken as a constant in many models, for example, as in LOWTRAN (reference 13). For altitudes above the tropopause, the concentration of CO decreases drastically due to the fact that it is oxidized by CO_2. The concentration of CO continues to decrease until one reaches the upper stratosphere. At this point, natural production of CO begins to take over and the concentration rises up through the mesosphere. The natural and man-produced variability of the concentration of CO along ground paths is very slight. In remote rural areas, the concentrations of CO vary from 0.01 to 0.20 ppm; whereas, in urban areas the concentrations of CO increases from 0.4 to 2.2 ppm. LOWTRAN uses 0.075 ppm.

The final two atmospheric constituent gases listed in table 1, ozone O_3 and water vapor H_2O, have concentrations that are highly variable. This variability is a function of altitude, season, geographical location, and atmospheric condition. Both of these gases are very important to infrared atmospheric propagation and affect atmospheric transmittance in both an absorption and scattering sense. Atmospheric propagation effects by ozone are more important for optical paths that involve high altitudes; whereas, atmospheric propagation effects at low altitudes (especially along horizontal ground level paths) are dominated by the effects caused by the concentrations of water vapor and carbon dioxide.

In the atmosphere, the concentration of ozone is at its maximum of 10.0 ppm (reference 15). Interestingly enough, 90% of all atmospheric ozone is concentrated between 10 to 30 km in altitude. In the upper atmosphere, the formation of ozone is through the photochemical dissociation of oxygen caused by the interaction of these molecules with radiation at wavelengths less than 250 nm. The dissociated oxygen atoms then rebond with oxygen molecules to form ozone. At lower altitudes near ground level, ozone is continually being formed and destroyed. Ozone is formed from the photochemical reduction of atmospheric pollutants; at the same time, it is being dissociated by ultraviolet radiation between 200 and 290 nm. Low altitude concentrations of ozone vary as a function of atmospheric motion (# collisions), dust, and other particles that interfere with the natural process of formation and destruction of ozone. Nature seeks establishment of an equilibrium state in this formation and destruction process; however, should an imbalance occur in the concentration of ozone at any altitude, time is required to restore this equilibrium. The time, which can be momentary or lengthy, has been studied and well documented. For altitudes above 50 km, this time is on the order of a few minutes; at around 30 km, it's a matter of a few days; and below 15 km, it's a matter of years. This explains the current duress of the ozone hole above Antarctica. The ozone hole occurs there at a very low altitude and extends to very high altitudes. Another disturbing fact is that the ozone concentration inside this "hole" is still increasing rather than seeking the natural equilibrium state. LOWTRAN uses the tabulated values (found in reference 17) that provide the ozone concentration as a function of altitude for the five different LOWTRAN

geographical model atmospheres: the TROPICAL Model, the MIDLATITUDE SUMMER Model, the MIDLATITUDE WINTER Model, the SUBARCTIC SUMMER Model, and the SUBARCTIC WINTER model. LOWTRAN 6 includes one other additional geographical model, which is the 1962 U.S. Standard Model; LOWTRAN 7 includes the 1976 U.S. Standard Model.

Water vapor is the most variable atmospheric constituent with regards to concentration. The presence of water vapor along an optical path has the most dominant effect on the resulting atmospheric transmittance, especially in the infrared wavelength bands. Reference 17 shows the values of the density of water vapor concentration for each of LOWTRAN's geographical model atmospheres. This concentration varies widely with altitude, for example, from approximately 15 g/meter^3 at ground level to 1.0E-09 g/m^3 at an altitude of 100 km. The concentration of water vapor varies between these LOWTRAN geographical models by as much as 6% to 7% at ground level. Water is the only atmospheric constituent to occur in more than one physical state. As a vapor in the atmosphere, it is invisible to the human eye, but is readily detectable by most infrared systems. Hygrometry is the branch of physics involved in the study and measurement of the amount of water in the atmosphere. This is the most relevant branch of meteorology that begins to define (quantitatively) bulk atmospheric conditions by measured atmospheric conditions. It is particularly helpful, in the study of atmospheric transmittance in the infrared, to relate observed or measured atmospheric transmittance values to basic atmospheric profiles (measured, for example, by radiosonde) such as water vapor content, temperature, pressure, wind speed and direction, as functions of altitude.

In Hygrometry, some basic definitions serve to interrelate some of the more important parameters; for example, the common term *Relative Humidity* is defined as the ratio of the amount of water vapor in a sample of air to the amount required to saturate this same sample at the same temperature. The term *saturated* applies to a sample of air that holds the maximum possible amount of water vapor and the *Dew Point Temperature*, which is the temperature of this sample when it becomes saturated. Two more important terms in Hygrometry are *Absolute Humidity* and *Mixing Ratio*. **Absolute Humidity** is the mass of water vapor contained in a unit volume of air (g/m^3); whereas, **Mixing Ratio** is the mass of water vapor per unit mass of dry air (g/kg^1).

One of the most important interrelations of these concepts is the amount of water vapor that a sample of air can hold. This amount is found to be a direct function of the temperature of this sample of air. In fact, if the relative humidity and the temperature are both known, then the absolute humidity can be calculated (see reference 18). All of these interrelations describe, in one way or another, the amount of water vapor present in a sample of air. Since atmospheric absorption along an imaging path is a direct function of the amount of absorbing molecules along that path, a parameter that describes the amount of absorbing water vapor particles along the path would be very helpful. This parameter is called *precipitable water*. By definition, *precipitable water content* is a measure of the depth of a column of water that would result from the condensation of all the water vapor in a column of air centered along this optical path. **Precipitable water content** is usually expressed in units of millimeters per kilometer (mm/km). Hudson

(reference 18) provides a convenient nomograph (figure 3) that converts values of relative or absolute humidity to precipitable water content. In reference 18, if the temperature is 25°C and the relative humidity is 60%, then the absolute humidity is 13.7 g/m³. The precipitable water content is then 13.7 mm/km; therefore, for a path 1-kilometer long, the total precipitable water content is 13.7 mm and for a 10-kilometer path, the precipitable water content is 13.7 mm. Precipitable water content (when expressed in mm/km), equals absolute humidity (when expressed in g/m³) for a path length of 1 kilometer. Precipitable water content gives us an excellent measure of the amount of water vapor along an optical path and serves as an excellent measure of the different types of atmospheres that were encountered in the APA Program. One final note that should be included here is that one should not confuse the absorption of a given thickness of precipitable water with the absorption of the same thickness of liquid water. The average transmittance (over the 3- to 14-micron wavelength region) through a 13.7 mm water path is approximately 0.1%; whereas, the average transmittance, over the same wavelength region with a precipitable water content of 13.7 mm, is approximately 55%.

In a similar manner, the number of gas molecules encountered along an optical path would also be a very helpful concept to determine the exact absorption of each of the infrared absorbing gases listed above. This concept is called *absorber content* and is usually expressed in atmosphere centimeters (atm-cm). This parameter, which is defined in a similar manner as the precipitable water content, describes an equivalent path length at Standard Temperature and Pressure (STP) that has the same number of infrared absorbing molecules as does that found along the optical path. This parameter is usually expressed as

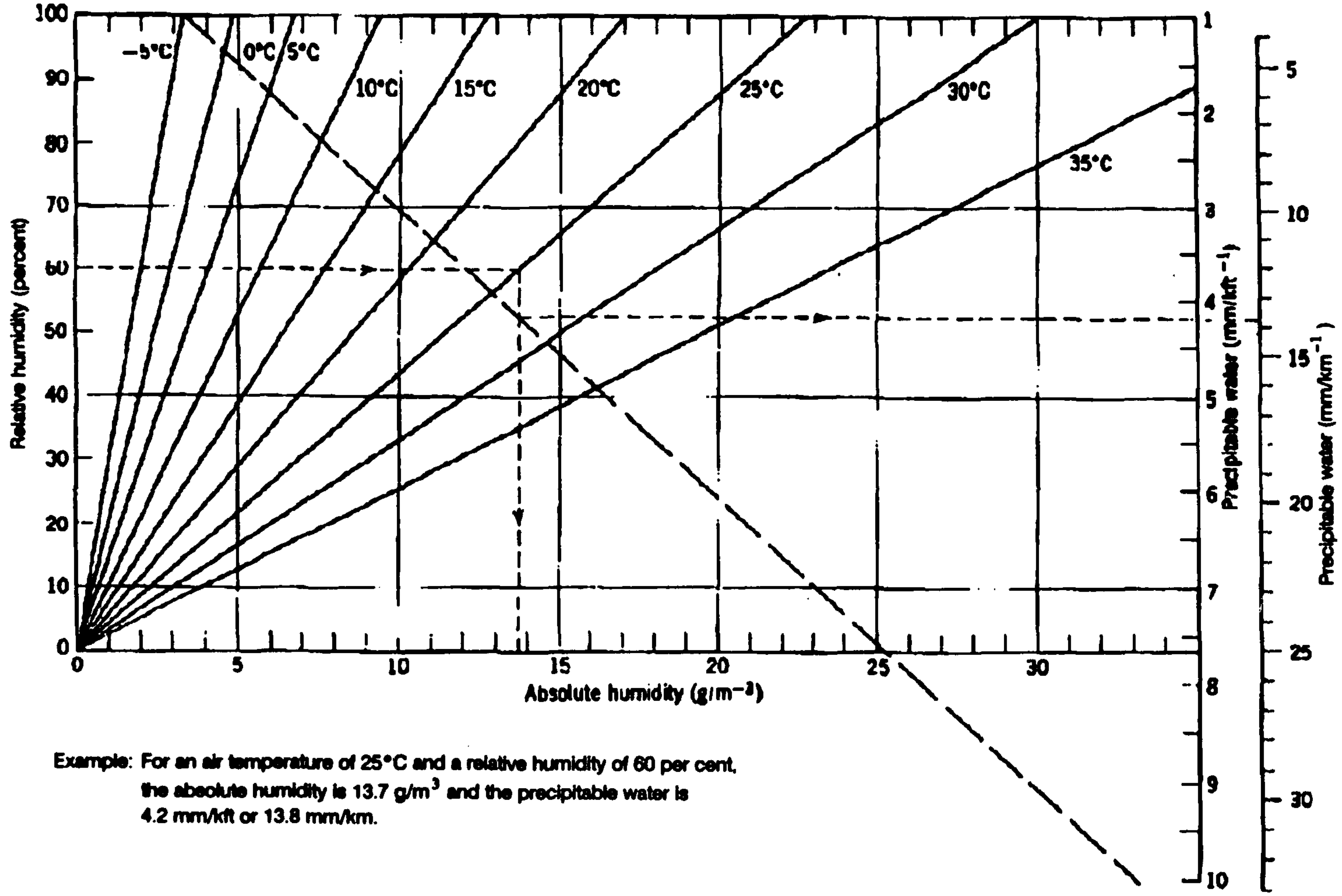
$$w = \left(\frac{px}{76}\right)\left(\frac{273}{273+T}\right) \tag{5}$$

where

w is the absorber content in cm-atm
p is the partial pressure of the absorbing gas in cm
x is the length of the optical path in cm
T is the temperature of the gas in °C.

In the APA Experiment, there was not a method to measure the absorber contents of each of these gases. Given the vast differences in the atmospheric and meteorological conditions that were encountered in the APA Deployments and the corresponding range of the resulting measured transmittance versus wavelength values, it is now known that a method to measure these absorber contents would be very valuable to this analysis. It is very possible that this type of data could better explain some of our results.

The previous paragraphs discussed the molecular distribution of the different atmospheric gases and their resulting effects to atmospheric extinction. On a macromolecule level, a similar methodology also applies. In this case, the particle-size number density and particle-size distribution are the key parameters in determining the amount of



Example: For an air temperature of 25°C and a relative humidity of 60 per cent, the absolute humidity is 13.7 g/m^3 and the precipitable water is 4.2 mm/kft or 13.8 mm/km.

Figure 3. Nomograph relating absolute and relative humidity to precipitable water content at various temperatures.

scattering that leads to atmospheric extinction. These distributions vary dramatically in the atmosphere, both geographically and temporally. Accurate measurements of these particles, given their size (from 1 to 1000 microns) and time dynamics, is very difficult to make, and good sources of this type of data are very rare. References 19 to 21, shown in figures 4 to 6, give an idea of the complexity of this problem. Figure 4 gives an average particle-size distribution curve for a continental and a maritime-air condition. Figure 5 shows the size distribution for a captured volume of haze and fog. Finally, figure 6 shows an example of a complex size distribution in a fair-weather cumulus cloud. The figures are good examples of the extent of this complex subject. They do not show the dynamics of these types of measurements. In figure 5, the number of 3- to 5-micron size particles for the haze case is nearly double that of their number for the fog case; also, the number in the 3- to 5-micron sizes are 300 to 400 times their number in the 8- to 15-micron size. This is just one case, and again, it does not show the time variance of these measurements. With the variance of these number densities and size distributions, it is not surprising that there are such differences in the resulting imagery in the infrared wavebands throughout the world. From simple physics, diffraction (or scattering) dominates when the wavelength of light that interacts with the particle is the same size as that particle. In these curves, it is apparent that the infrared wavebands that are most interesting are exactly the same size as the particles that must be accounted for in atmospheric propagation. A thorough description of this subject with accurate measurements would allow very accurate calculations of atmospheric transmittance to be made, but as mentioned, accurate measurements of these distributions are very rare.

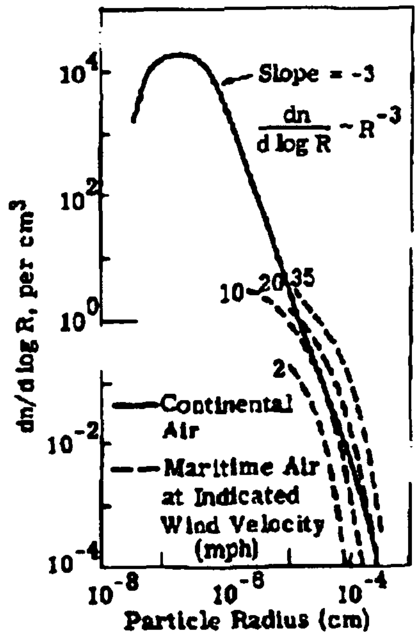


Figure 4. Particle-size distribution for continental and maritime air.

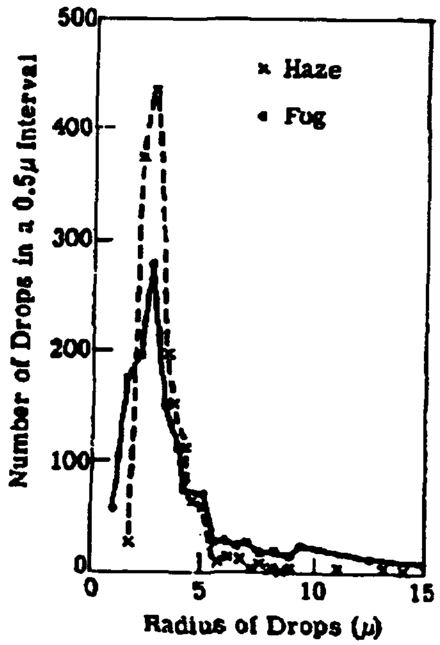


Figure 5. Particle-size distribution measured by capture for a haze and a fog.

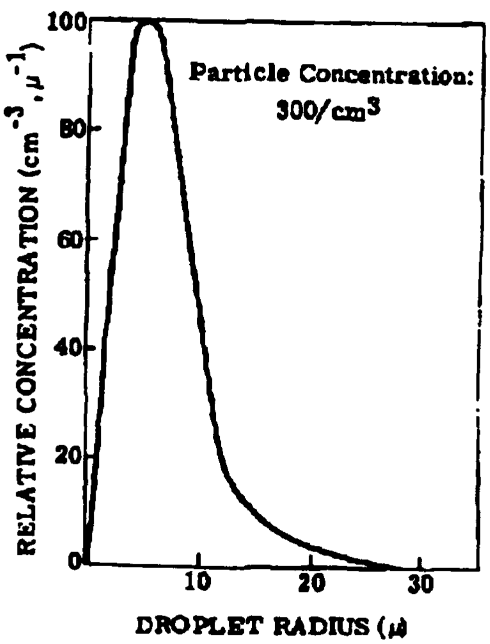


Figure 6. Relative size-distribution of droplets in a fair-weather cumulus cloud.

2.2.2 Atmospheric Absorption

This section discusses the atmospheric absorption process. From equation 2 for the extinction coefficient σ , both absorption and scattering result when light interacts with matter. Atmospheric absorption can best be described as following the Bouguer-Lambert law; for example, as monochromatic parallel light enters an absorbing layer, the flux at any given point within this layer is

$$P = P_o e^{-ax} \tag{6}$$

where

P is the flux remaining after the beam has traversed a path length of x centimeters

P_o is the initial flux value entering the layer

a is the absorption coefficient (cm^{-1}) of this layer.

If the absorbing layer is a liquid or solid, then some of the flux will be lost due to reflection at the surface. Energy is conserved; therefore, the above absorption law is valid for only points internal to the layer and does not include the amount of flux lost through reflection at the surface. Expanding this concept, the transmittance through this layer is described as

$$\tau'(\lambda) = \frac{P}{P_o} = e^{-a(\lambda)x} \tag{7}$$

where $\tau'(\lambda)$ is the *internal spectral transmittance* and is a function of wavelength λ, optical path distance x, and the absorption coefficient a.

The absorptance of this layer is then defined to be

$$A(\lambda) = 1 - \tau'(\lambda) = 1 - e^{-a(\lambda)x} \tag{8}$$

Actual measurements of all the atmospheric infrared absorption bands have been made with high resolution spectroradiometers. Barker and Adel's work (reference 22), figure 7, provides examples of high resolution spectra of water vapor and carbon dioxide. These examples show many closely spaced absorption lines that varying in spacing and amplitude. Again, the exact spacing of these spectral measurements depends on the resolution of the spectroradiometer used. To be better understood, this type of molecular absorption band requires a more formal solution of the radiative transfer equation. Quite often a simplifying solution is used as a starting point; for example, to determine a measured target radiance with a spectroradiometer with a given spectral width $\Delta\nu$, $\bar{\tau}(\nu)$ results. $\bar{\tau}(\nu)$ is represented by

$$\bar{\tau}(\nu) = \frac{1}{\Delta\nu} \int_{\Delta\nu} \tau(\nu)\, d\nu \tag{9}$$

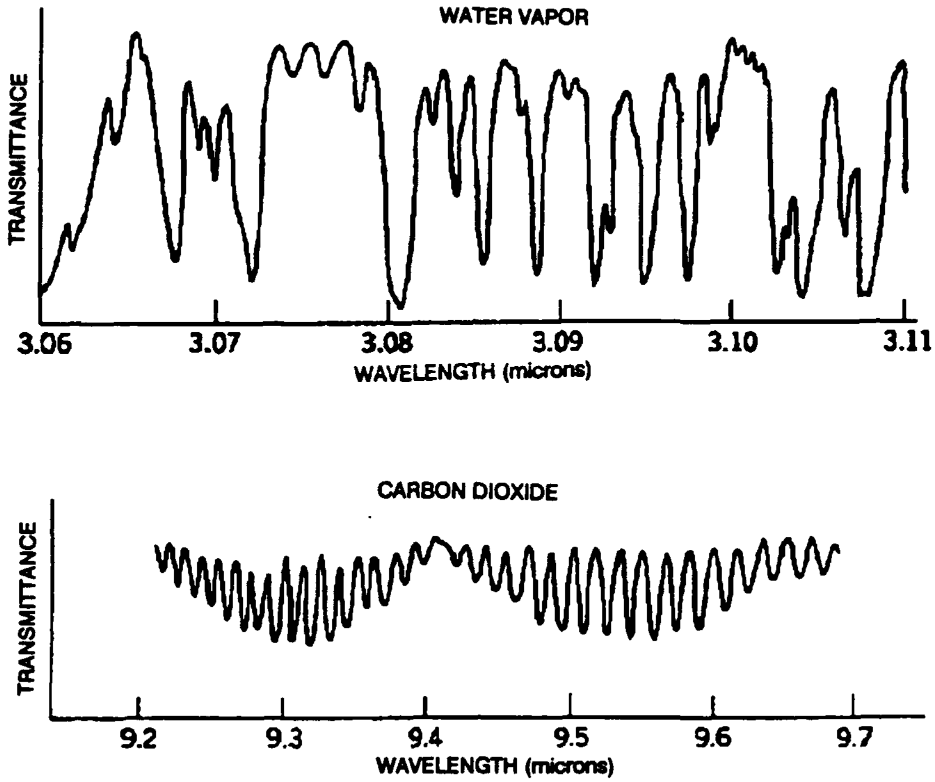


Figure 7. High-resolution spectra of water vapor and carbon dioxide.

The equation (9) is an approximation. For a real spectroradiometer, the equation should be

$$\tau_{\Delta\nu}(\nu) = \frac{1}{\Delta\nu} \int_{\Delta\nu} \tau(\nu')\xi(\nu' - \nu)\, d\nu' \tag{10}$$

which is the convolution of the spectral transmittance with the normalized spectral slit function ζ of the instrument with the center of the interval being ν.

A final expression for the atmospheric transmittance results and is defined to be

$$\bar{\tau}_{\Delta\nu}\Delta\nu = \int_{\Delta\nu} e^{-q(\nu)}\, d\nu \tag{11}$$

$$\text{where } q(v) = \int_{path} K_a(\nu, z)\, \rho\, dz$$

An example of the complexity of this final function is shown in figure 8 (reference 23). This high degree of structure covers a region of only 0.025 microns. It often makes sense to analytically determine atmospheric transmittance from absorption by single lines and combine them with the absorption of various assumed groupings of lines or bands. A complete description of this analytical derivation of atmospheric absorption theories is shown in reference 14. Total absorption data provide a method to predict atmospheric absorption by knowing the amounts and concentrations of absorbers in the atmosphere.

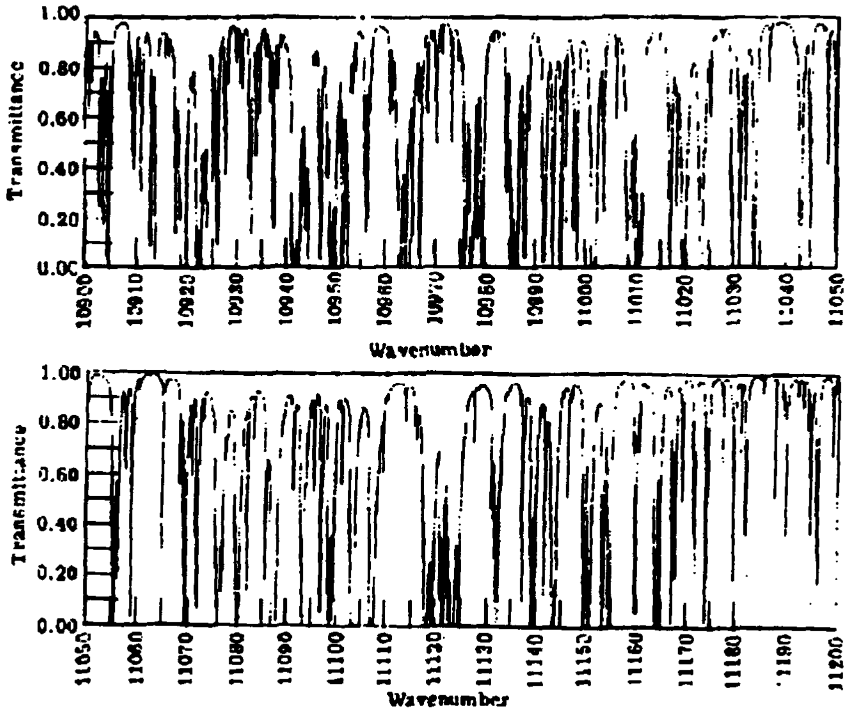


Figure 8. Atmospheric transmittance due to molecular absorption through a 10-km horizontal path at sea level.

For CO_2, strong absorption exists in the 2.7-micron region, the 4.3-micron region, and the region between 11.4 microns and 20 microns. Weaker absorption bands are present at 1.4 microns, 1.6 microns, 2.0 microns, 4.8 microns, 5.2 microns, 9.4 microns, and 10.4 microns.

For H_2O, strong absorptions exists in the 6.27-micron, 2.70-, and 1.87-micron H_2O bands. The absorption in the 2.70-micron region is caused by two absorptions bands centered at 2.73 microns and 2.66 microns. Minor H_2O absorption bands occur at 3.2 microns, 1.38 microns, 1.1 microns, and 0.94 microns.

For N_2O, strong absorption exists in the 3.9-micron, 4.05-micron, 7.7-micron, 8.6-micron, and 17.1-micron regions. Strong absorption occurs at the 2.3-micron and 4.6-micron region due to CO bands; at 3.31 microns, 6.5 microns, and 7.6 microns, strong absorption occurs due to CH_4.

2.2.3 Atmospheric Scattering

The extinction coefficient σ, represented in section 2.2, includes the term for the effects due to scattering σ_s. Atmospheric scattering is of major concern in the visible portion of the spectrum where it is usually described by its effect on visibility. In general, the solution to the radiative transfer equation for scattering atmospheres involves very complex mathematical descriptions. Various simplifying assumptions and boundary conditions are quite often used to make this subject more understandable. The first of these

simplifying approximations is to assume single scattering. This assumption often leads to accuracies comparable with many of the other tools used in atmospheric prediction such as meteorological data inputs, or the prediction accuracies of the LOWTRAN code.

Using the most standard solution to the radiative transfer equation that was derived in section 2.2 (reference 14)

$$L_\lambda(\lambda, q, -\mu, \phi) = $$

$$L_\lambda(\lambda, q_1, -\mu, \phi)\, e^{-(q-q_1)/\mu} + \int_{q_1}^{q} e^{-(q-q')/\mu}\, J_\lambda(\lambda, q', -\mu, \phi)\, \frac{dq'}{\mu} \tag{12}$$

This equation must now be modified to include the spectroradiometer field of view, since the amount of attenuation due to scattering of a collimated light beam depends upon the receiver field of view. The best description of the field of view correction is covered in reference 24, experimental predictions of the amount of this effect on various radiometers are covered in references 25 and 26. This report shall use the expression derived by Stewart (reference 26); for example,

$$\tau_\theta = \tau + 0.5(1-\tau)(1-e^{-\theta}) \tag{13}$$

where

θ = angular diameter of radiometer field of view (in radians)
τ_θ = transmittance measured at a particular θ with a radiometer having a certain field of view
τ = transmittance of unscattered light.

From the two equations (12 and 13), scattering is usually divided into three approaches that involve the exact relationship between the wavelength of the light being scattered and the physical size of the particles causing the scattering. These three approaches are the following: *Rayleigh scattering; Mie scattering*, and *nonselective scattering*.

Rayleigh scattering dominates when the wavelength of light is much larger than the particle size. In this case, the volume scattering coefficient for Rayleigh scattering is usually taken as (reference 27)

$$\sigma = \left(\frac{4\pi^2 N V^2}{\lambda^4}\right) \frac{(n^2 - n_o^2)^2}{(n^2 + 2n_o^2)^2} \tag{14}$$

where

N = number of particles per unit volume (cm^{-3})
V = volume of scattering particles (cm^3)
λ = wavelength of radiation (cm)
n_o = refractive index of medium in which particles are suspended
n = refractive index of scattering particles

For spherical water droplets in air, for example, n_o is approximately equal to 1 and n_{water} is approximately equal to 1.33 for the visible and near infrared, then the expression simplifies to the more common Rayleigh scattering coefficient of

$$\sigma = \frac{0.827NA^3}{\lambda^4} \tag{15}$$

where A is the cross-sectional area of the scattering droplet. It should be noted that for this expression to be correct, it must be integrated over the entire range of λ and A.

Mie scattering dominates when the particle size is approximately equal to the wavelength. The *Mie scattering coefficient* is usually defined as an area scattering coefficient rather than a volume scattering coefficient, resulting in a rather simple relation. **The Mie scattering area coefficient** (reference 28) is defined as the ratio of the area of the incident wave front that is affected by the particle to the cross-sectional area of the particle itself. The form of this relationship (reference 28) is shown in figure 9. As can be seen from the figure, a strong dependence exists between scattering-area coefficient and particle-size radius. In fact, the value of K varies between 0 and 4 and asymptotically approaches the value of 2 for large droplets. If one now assumes perfect spherical particles (i.e., water droplets), then this area scattering coefficient can be converted to the scattering volume coefficient as

$$\sigma = NK\pi a^2 \tag{16}$$

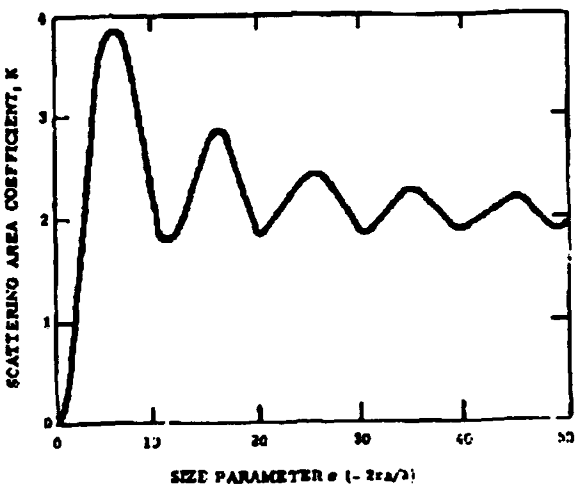


Figure 9. Scattering-area coefficient versus size parameter for spherical water droplets (radius = a), index of refraction (n = 1.33).

For a continuous size distribution of particles, the final equation becomes

$$\sigma_\lambda = \pi \int_{a_1}^{a_2} N(a)\, K(a,n)\, a^2\, da \tag{17}$$

where

σ_λ	=	scattering coefficient at wavelength
$N(a)$	=	number of particles per cubic centimeter in the interval da
$K(a,n)$	=	scattering area coefficient
a	=	radius of a spherical particle
n	=	index of refraction of the particle.

Nonselective scattering dominates when the particle size is much larger than the wavelength. In this case, large-particle scattering follows a combination of three different processes: (1) the light is reflected from the surface of the particle with no penetration; (2) the light passes through the particle with and without reflections, and with some amount of absorption; (3) the light is diffracted at the surface of the particle. Reference 27 discusses these combined effects in some detail. Their results show that for particles larger than two times the wavelength of the light, that the scattering-area coefficient becomes 2. This follows the Mie theory results. Generally, for $\alpha < 20$, the Mie theory is considered to be valid, but for $\alpha > 20$, the solution of $K = 2$ holds; α is defined as the size parameter ($= 2\pi a/\lambda$).

2.2.4 Infrared Atmospheric Absorption and Scattering

In the last two sections, the generalized theory of atmospheric absorption and scattering was discussed. This theory must not be tied to the ultimate goals of this analysis, for example, to determine the effects of the atmospheric extinction processes close to the ocean surface. The data collected in the APA experiments, which are shown in section 3 and analyzed in section 4, will show that some of these processes tend to dominate given specific conditions and at specific wavelengths. As expected, atmospheric absorption in absorption bands, designated in section 2.2.2, tends to dominate the results; for example, inside the absorption bands, absorption rather than scattering dominates. The clear day data demonstrated this. On the APA Adak days of light-to-heavy snow, however, the scattering effects begin to overlay on the absorption bands and this effect becomes clearly visible. All in all, the APA data tend to support the commonly excepted ideas of infrared atmospheric propagation, where absorption is the more dominant effect in all conditions. The scattering effects are, however, present in clouds, fogs, mists, rain, and snow. In fact, the APA data show that a combination of these effects actually results. The amount of aerosol effect in the APA data was, unfortunately, not clear. The only method known to quantify this effect is by comparing the measured data with that of the predictions of LOWTRAN for no aerosol effect present. The validity of this comparison technique must be questioned, given the lack of validation of the LOWTRAN predictions, which will be discussed in more detail below.

2.3 FIELD MEASUREMENTS OF ATMOSPHERIC TRANSMITTANCE

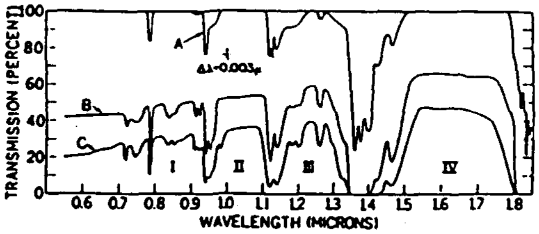
Reliable measurements of atmospheric transmittance in the infrared are extremely rare. In fact, the rarity of this type of data was the reason that the APA program was performed. The best source of infrared atmospheric transmittance measurements is still

those performed by Taylor and Yates (reference 1) in March of 1957. These measurements, shown in figure 10, were performed at the Naval Research Laboratory-Chesapeake Bay Annex. These infrared transmittance measurements, which covered the 0.5- to 15-micron wavelength region, were measured over three horizontal paths of 1000 feet, 3.4 statute miles, and 10.1 statute miles. Taylor and Yates (reference 1) used a 60-inch arc searchlight as their source and a Perkin-Elmer infrared spectroradiometer as their measuring device. The two longer paths were performed over the Bay with sensor and searchlight heights estimated to range from 25 to 40 feet off the surface of the bay. Their experiments were set up to occur over a wide range of atmospheric and meteorological conditions. The three resulting sets of data show data for each of the infrared wavebands that are of interest. This data represented a starting data point for the APA Experiment 1. The meteorological conditions that occurred for curves A, B, and C showed a precipitable water content of 3.8 mm/km, 2.6 mm/km, and 3.2 mm/km respectively; for example, conditions of relatively low water content.

The goal of APA Experiment 1 was to take this measured data as a starting point, and to make these same type of atmospheric transmittance measurements in the two infrared wavebands closer to the ocean surface, and over a wider range of atmospheric and meteorological conditions. This was accomplished in APA Experiment 1. Data were collected with sensor and source heights of 1 to 3 meters off of the surface of the water, under various atmospheric conditions. The APA deploment in Adak, Alaska, encountered low water content of 2.7 mm/km to 4.7 mm/km at wind speeds from 1 to 12 knots. Conditions encountered were clear, light snow, moderate snow, and heavy snow with low temperatures. Wind speeds in excess of 12 knots were not encountered; thus, transmittance data with high aerosol content was not collected. The APA experiment at Pensacola, Florida encountered the opposite case as the Adak deployment; high water content data at high temperatures was gathered. In Pensacola, the water content varied from 18.4 to 23.3 mm/km. The results if the APA experiments are discussed in section 4.

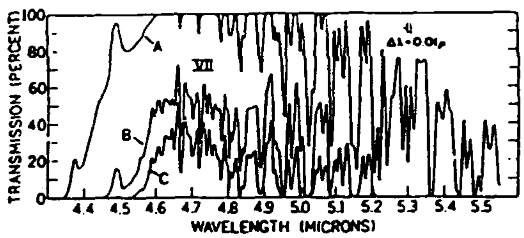
2.4 COMPUTER MODELING

Atmospheric degradation is currently best modelled and predicted by the Air Force Geophysical Laboratory LOWTRAN Computer Simulation Program (reference 3). This program predicts atmospheric transmittance and atmospheric radiance over user-defined pathlengths. This was developed by the U.S. Air Force to predict atmospheric transmittance losses over the air-to-ground and air-to-air geometries. The submarine-imaging environment is quite different. The wave action, wind speed, offshore continental and onshore dynamics, and many other atmospheric parameters serve to generate specific and dynamic aerosol particle distributions in both particle size and particle density. Attempts to validate LOWTRAN's predictions, in this specific geometry with their typical aerosols, have not been very successful. The aerosol models incorporated in LOWTRAN do not seem to predict the actual degradations that we have seen in the imagery. It is the authors' consensus that the dynamics of the generation and lingering of these aerosol particles have yet to be described accurately. These aerosol particles vary dynamically in both particle size distributions and particle (size) number densities. Measurements of these particles show typical sizes from 1.0-micron particles to 100-micron particles. These



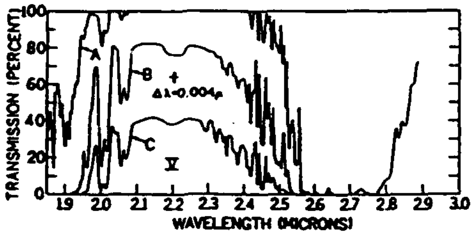
CURVE	PATH LENGTH	DATE	TIME	TEMP.	R.H.	PRECIPITABLE WATER	VISUAL RANGE
A	1000'	3-20-56	3 PM	37°F	62%	1.1 MM	22 MI.
B	3.4 MI.	3-20-56	10PM	34.5°F	47%	13.7 MM	16 MI.
C	10.1 MI.	3-21-56	12AM	40.5°F	48%	52.0 MM	24 MI.

WINDOW DEFINITIONS
I 0.72 TO 0.94μ
II 0.94 TO 1.13μ
III 1.13 TO 1.38μ
IV 1.38 TO 1.90μ



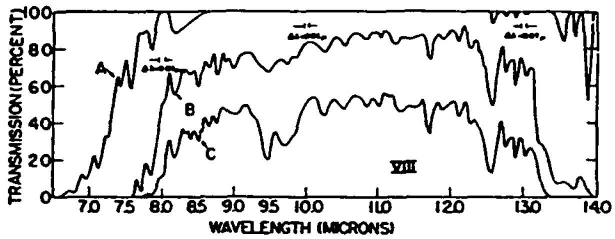
CURVE	PATH LENGTH	DATE	TIME	TEMP.	R.H.	PRECIPITABLE WATER	VISUAL RANGE
A	1000'	3-20-56	3PM	37°F	62%	1.1 MM	22 MI
B	3.4 MI	3-20-56	10PM	34.5°F	47%	13.7 MM	16 MI
C	10.1 MI	3-21-56	12AM	40.5°F	48%	52.0 MM	24 MI

WINDOW DEFINITION
VII 4.30 TO 6.0μ



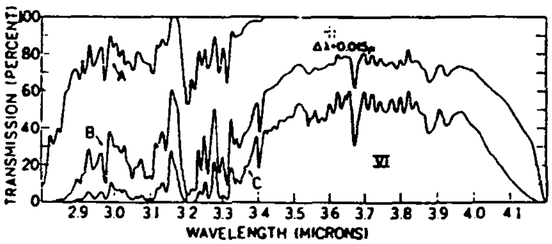
CURVE	PATH LENGTH	DATE	TIME	TEMP.	R.H.	PRECIPITABLE WATER	VISUAL RANGE
A	1000'	3-20-56	3PM	37°F	62%	1.1 MM	22MI.
B	3.4MI	3-20-56	10PM	34.5°F	47%	13.7MM	16 MI
C	10.1MI	3-21-56	12AM	40.5°F	48%	52.0MM	24MI

WINDOW DEFINITION
V 1.90 TO 2.70μ



CURVE	PATH LENGTH	DATE	TIME	TEMP.	R.H.	PRECIPITABLE WATER	VISUAL RANGE
A	1000'	3-20-56	3PM	37°F	62%	1.1 MM	22 MI
B	3.4MI	3-20-56	10PM	34.5°F	47%	13.7MM	16 MI
C	10.1MI	3-21-56	12AM	40.5°F	48%	52.0MM	24MI

WINDOW DEFINITION
VIII 6.0 TO 15.0μ



CURVE	PATH LENGTH	DATE	TIME	TEMP.	R.H.	PRECIPITABLE WATER	VISUAL RANGE
A	1000'	3-20-56	3PM	37°F	62%	1.1 MM	22 MI
B	3.4MI	3-20-56	10PM	34.5°F	47%	13.7MM	16 MI
C	10.1MI	3-21-56	12AM	40.5°F	48%	52.0MM	24MI

WINDOW DEFINITION
VI 2.70 TO 4.30μ

Figure 10. Atmospheric transmission spectra.

particles can reach millimeter diameters. It has been shown in the past that these specific particle distributions can severely effect the resulting quality of the FLIR imagery. Atmospheric (aerosol and molecular) scattering and absorption are the two phenomenon that most effect this image degradation.

Attempts to validate the predictions of the LOWTRAN code, for near horizontal paths close to the ocean surface, has been the subject of much study over the past 10 to 15 years. The authors work in (reference 5) 1987, and subsequent works by Hughes (references 9 and 12) and Wollenweber (references 10 and 11), represent the latest attempts to show LOWTRAN 6 and LOWTRAN 7's prediction results as compared with actual transmittance measurements. Wollenweber's work in the modification of the LOWTRAN 6 code (reference 10), by finely layering the radiosonde inputs and the correction of the singularity in LOWTRAN which occurs at elevation angles close to 90°, seems to be the best approach. The references cited above detail these effects. For this report, Wollenweber's modified version of LOWTRAN 6 was unavailable for comparison with the APA transmittance measurements; however, LOWTRAN 6 and LOWTRAN 7 prediction results are compared with the APA transmittance measurements, and these results are shown in section 4. The LOWTRAN 6 and LOWTRAN 7 sources were PC versions of LOWTRAN by ONTAR Corporation, and the radiosonde data inputs were limited to the normal data collected at each site by the Naval Oceanographic Command Detachment (NOCD), Asheville, North Carolina. It should be noted that this is both the most conservative and the worse case scenarios for LOWTRAN validation, yet it does show how close the LOWTRAN versions can predict atmospheric transmittance, given the two vastly different APA deployment areas, and resulting atmospheric conditions.

It should be noted from references 9 and 11, that there are problems with LOWTRAN at elevation angles close to 90°. The ONTAR Corporation versions of LOWTRAN used in this paper do not correct for this singularity error. Our sensor and source geometries for the APA Experiment were such that we were always about 89.9° in elevation angle. This was done to perform the experiment as close to the ocean surface as possible. This means that although the LOWTRAN results will be incorrect, it will show the LOWTRAN results one would get from the current published versions. Comparing these results with the APA transmittance data will show how close LOWTRAN can get, but the analysis of the amount of aerosol encountered will include this significant error.

2.5 APA TECHNICAL APPROACH

2.5.1 Test Site Criterion Analysis

Developing the test site criteria was, perhaps, the most important task of this analysis. It was necessary to develop atmospheric condition requirements based on historical problems with IR periscope imagery, the conditions encountered in actual submarine operational areas, the requirements derived from the Photonics Mast Program's Mission Effectiveness Analysis, and the established atmospheric database at Naval Oceanography Command Detachment (NOCD), Asheville. The goal was to select the best test sites, due to the inability of performing the measurements in the desired operational areas. The data

acquired from NOCD was the Summary of Synoptic Meteorological Observations (SSMO). The data represents an accumulation of over 100 years of atmospheric data for a given area compiled to give monthly averages. The strength of the SSMO database is its size and longevity. This data includes wind speed and direction, cloud amount, visibility, ceiling heights, relative humidity, temperature, air-sea temperature differences and wave height. The SSMO data is provided in tabular form and represents a collection of actual measured atmospheric data, as well as, a summary of statistical outcomes. Frequency of occurrences are provided in percentages, by month. Nineteen information tables are provided per area. For the APA test site criteria analysis, eight of the tables were chosen for this analysis. As shown in figure 11, bulk weather is represented in table 1; wind speed and direction in tables 3, 9, and 18; visibility in tables 8 and 9; relative humidity in table 13; temperature in table 15; air-sea temperature difference in table 17; and positive wave heights in table 18.

Using the software program (Microsoft EXCEL) on the extracted data, a series of comparison programs were developed to operate on the database. The comparison operation starts with a program that computes and records the error value, which is the relative difference between the test area worksheet values and that of an operational area (figure 12). A second program then computes an average of these deltas per table, and this average delta is compared to a typical error value. The error value was selected based on a typical value of the accuracy of the measured parameter. For table 1, this delta is 5%; for table 3 this delta is 2%; for tables 8 and 9, this delta is 5%; for tables 13, 15, and 18, this delta is 2%. Again, these deltas roughly correspond to the typical error associated with the measurement of these parameters in the field. Figure 13 shows the result of the error comparison. An "x" is placed in the box if the test area and operational area difference is within the error values listed in the mentioned tables. The greater number of "x" entries in a column, the better the test site represents the operational site.

The error comparison procedure was used in determining the 50° North test site for the North latitude APA test site. The list below shows the result of the test site comparison by month. The number in parenthesis represents the number of operational area months that the test area had at least five out of eight "x" values.

January: Attu (85)
Adak Island (17)
Unimak (16)
Dutch Harbor (15)
Seward (10)

February: Unimak (23)
Dutch Harbor (21)
Seward (15)
Adak Island (12)

March: Unimak (22)
Dutch Harbor (17)
Adak Island (16)

Atmospheric Propagation Data

Location ADAK Latitude 51-55N Longitude 172-180W Month of Year Feb. COLOR BLUE NOCD Area 9

TABLE 1

Weather	%
Rain	5.7
Rain/Shws	0.0
Drizzle	4.8
Fog w/o p	2.8
Snow	18.8
No Sig W	65.9

TABLE 3

Wind	%	Direction	%
0-3 kts	3.8	N	0.0
4-10 kts	23.7	NE	12.2
11-21 kts	33.7	NW	0.0
22-33 kts	26.0	S	0.0
34-47 kts	10.8	SE	12.4
>48 kts	2.2	SW	16.6
		E	13.0
		W	12.5

TABLE 8

Visibility (nm)	%
10+ no prec	33.7
10+ w/prec	2.7
5-10 no prec	26.6
5-10 w/prec	11.2
2-5 no prec	5.9
2-5 w/prec	7.4
1-2 no prec	2.9
1-2 w/prec	4.4
<1 no prec	0.5
<1 w/prec	1.1

TABLE 9

Visibility (nm)	%
10+	36.1
5-10	36.3
2-5	14.6
1-2	7.9
<1	1.4
Direction	**%**
N	0.0
NE	0.0
NW	0.0
S	12.4
SE	12.4
SW	16.4
E	13.3
W	12.4

TABLE 13

Relative Humidity	%
90-100%	47.9
80-89%	32.6
70-79%	14.4
60-69%	4.4

TABLE 15

24-Hour Monthly Mean Temp 35.2
High 47 Low 20

TABLE 17

Air Temp	%	A/S Low	A/S High
1-4	0.0		
5-8	0.0		
9-12	0.0		
13-16	0.0		
17-20	0.0		
21-24	1.8	-19	-11
25-28	7.7	-22	-5
29-32	13.3	-13	-2
33-36	37.3	-13	2
37-40	35.2	-8	5
41-44	4.3	0	10
45-48	0.0		
49-52	0.0		
53-56	0.0		
57-60	0.0		
61-64	0.0		
65-68	0.0		
69-72	0.0		

TABLE 18

Wind	%
0-3 kts	1.3
4-10 kts	13.0
11-21 kts	40.4
22-33 kts	32.6
34-47 kts	10.4
>48 kts	2.2
Wave Ht.	**%**
<1 ft.	2.6
1-2 ft.	7.4
3-4 ft.	13.0
5-6 ft.	15.2
7 ft.	20.4
8-9 ft.	16.5
10-11 ft.	4.9
12 ft.	4.8
13-16 ft.	8.7
17-19 ft.	2.2
20-25 ft.	1.2
26-32 ft.	
33-40 ft.	

Direction	Wind	%	Wave Ht.
N	11-21	1.3	7
N	22-33	1.3	13-16
NE	11-21	1.3	3-4
NE	22-33	1.3	7
E	11-21	1.8	3-4
E	22-33	1.8	5-6
E	22-33	1.3	7
SE	11-21	1.3	5-6
SE	11-21	2.2	7
SE	11-21	1.3	8-9
S	11-21	1.8	3-4
S	11-21	1.8	5-6
S	22-33	1.3	3-4
S	34-47	1.8	8-9
SW	4-10	1.3	1-2
SW	11-21	1.8	5-6
SW	11-21	3.9	7
SW	11-21	2.2	8-9
SW	11-21	1.3	10-11
W	11-21	1.3	7
W	22-33	1.3	8-9
W	22-33	1.3	12
W	34-47	1.8	13-16

Direction	Wind	%	Wave Ht.
NW	4-10	1.8	1-2
NW	11-21	1.3	7
NW	22-33	2.8	7
NW	22-33	1.3	10-11

Figure 11. APA atmospheric data sheet.

Atmospheric Propagation Data Comparison

Month February

Test Area NOCO # 3 Color BLUE

Operational Area NOCO # 3 Color red

TABLE 1

Weather	J	F	M	A	M	J	J	A	S	O	N	D
Rain	9.1	9.1	7.5	9.1	7.0	5.0	5.5	2.4	3.3	6.0	9.1	9.1
Rain/Shws	2.2	2.2	1.7	2.2	1.1	2.1	1.9	2.2	2.2	2.2	2.2	2.2
Drizzle	3.2	4.3	3.8	4.3	-2.0	1.3	1.4	-2.4	2.1	2.2	2.8	4.3
Fog w/o p	-6.1	-0.9	1.9	2.4	-22.3	-16.8	-22.6	-10.8	-0.3	1.1	2.4	2.4
Snow	-13.5	-23.3	-25.0	5.6	4.5	5.1	5.6	5.6	4.6	5.6	-23.3	5.6
No Sig W	10.1	9.3	20.6	77.1	18.2	7.6	11.4	8.2	-6.3	-0.8	14.1	77.1

TABLE 13

R. Hum.	J	F	M	A	M	J	J	A	S	O	N	D
90-100%	-1.7	-5.3	-0.6	52.8	-39.1	-23.3	-1.7	-3.3	13.6	21.1	52.8	52.8
80-89%	19.6	16.2	-9.2	25.9	18.5	7.5	-0.6	-6.1	-3.3	-14.1	25.9	25.9
70-79%	12.6	-3.5	7.4	12.6	11.9	7.0	-3.6	2.5	-12.0	-10.7	12.6	12.6
60-69%	7.8	1.3	4.4	7.8	7.8	7.8	6.4	6.5	2.5	2.8	7.8	7.8

TABLE 17

Air Temp	J	F	M	A	M	J	J	A	S	O	N	D
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-4	-14.0	-7.4	-6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-8	-8.1	-2.9	-10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-12	-7.0	-7.4	-10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.1	0.0
13-16	-8.1	-14.7	-4.7	0.0	0.0	0.0	0.0	0.0	0.0	-1.9	-9.9	0.0
17-20	-5.8	-13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-5.4	-4.4	0.0
21-24	-16.3	-7.4	-4.0	0.0	0.0	0.0	0.0	0.0	0.0	-8.0	-11.0	0.0
25-28	-12.8	-20.6	-15.3	0.0	-1.6	-0.3	0.0	0.0	0.0	-10.5	-14.3	0.0
29-32	-10.9	-11.1	-38.8	6.5	1.2	3.9	6.5	6.5	5.4	-10.4	-21.0	6.5
33-36	9.0	8.3	13.1	17.1	-33.7	7.5	16.4	17.1	9.1	-10.4	-3.8	17.1
37-40	37.0	39.4	39.4	39.4	2.5	9.1	35.6	36.9	13.5	20.2	29.5	39.4
41-44	24.7	24.7	24.7	24.7	19.9	-10.5	2.4	11.4	-0.8	18.3	24.7	24.7
45-48	11.5	11.5	11.5	11.5	11.0	0.4	-24.2	-40.1	-19.6	7.7	10.4	11.5
49-52	0.0	0.0	0.0	0.0	0.0	-6.0	-26.0	-21.7	-6.7	0.0	0.0	0.0
53-56	0.0	0.0	0.0	0.0	0.0	-3.1	-11.2	-7.4	-1.1	0.0	0.0	0.0
57-60	0.0	0.0	0.0	0.0	0.0	-1.7	-3.4	-1.8	0.0	0.0	0.0	0.0
61-64	0.0	0.0	0.0	0.0	0.0	-0.3	-0.9	-1.0	0.0	0.0	0.0	0.0
65-68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
69-72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TABLE 3

Wind	J	F	M	A	M	J	J	A	S	O	N	D
0-3 kts	4.8	4.4	7.0	8.9	-0.2	-2.3	-4.5	-3.4	-0.4	4.1	3.1	8.9
4-10 kts	5.0	-1.6	-16.0	25.4	-15.8	-18.6	-13.4	-16.0	-5.4	6.9	10.2	25.4
11-21 kts	-5.4	-0.6	-6.0	35.4	-10.1	-5.8	-5.6	-1.5	-5.3	-11.1	-7.4	35.4
22-33 kts	-8.9	-7.3	8.2	19.7	15.4	16.1	12.9	10.6	2.9	-5.0	-11.5	19.7
34-47 kts	2.0	2.5	4.3	8.1	8.1	8.1	4.9	7.8	5.7	3.0	3.0	8.1
>48 kts	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Direction	J	F	M	A	M	J	J	A	S	O	N	D
N	-8.1	11.5	-2.5	11.5	11.5	11.5	11.5	-2.1	-15.7	-12.4	-6.3	11.5
NE	-23.1	-11.7	-19.2	8.8	8.8	8.8	8.8	-8.3	-10.4	-8.7	-24.9	8.8
NW	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	-5.3	-17.0	8.5	8.5
S	11.3	11.3	11.3	11.3	-26.7	-4.9	-6.9	11.3	11.3	11.3	11.3	11.3
SE	16.1	16.1	1.8	16.1	16.1	3.1	-0.3	2.4	16.1	16.1	16.1	16.1
SW	9.6	9.6	9.6	9.6	-18.2	-7.4	-11.6	9.6	9.6	9.6	9.6	9.6
E	4.7	-5.5	2.1	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
W	11.6	-10.9	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6

TABLE 15

	J	F	M	A	M	J	J	A	S	O	N	D
24-hr T	20.7	21.1	20.2	39.2	3.2	-2.3	-8.2	-8.7	-3.0	6.5	12.4	39.2
Low	29.0	33.0	35.0	25.0	-2.0	-2.0	-7.0	-9.0	2.0	16.0	20.0	25.0
High	2.0	15.0	9.0	50.0	5.0	-11.0	-22.0	-22.0	-9.0	2.0	5.0	50.0

TABLE 18

Wind	J	F	M	A	M	J	J	A	S	O	N	D
0-3 kts	-2.6	4.3	-2.7	4.3	-5.0	-6.6	-9.0	-8.0	-4.5	1.1	-1.5	4.3
4-10 kts	-11.0	-40.0	-56.7	20.0	-21.5	-24.2	-19.4	-23.0	-10.3	2.6	4.9	20.0
11-21 kts	-15.3	6.3	23.7	33.0	-11.8	-8.3	-7.7	-4.2	-8.1	-16.4	-7.7	33.0
22-33 kts	18.4	22.0	24.0	28.7	24.3	25.1	22.3	21.4	12.2	3.6	-2.7	28.7
34-47 kts	7.9	4.6	9.0	11.3	11.3	11.3	11.1	11.0	8.0	6.4	4.3	11.3
>48 kts	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Wave Ht.	J	F	M	A	M	J	J	A	S	O	N	D
<1 ft.	-50.8	-65.5	-75.4	7.8	-10.2	-21.0	-21.2	-25.1	-13.0	1.7	-2.7	7.8
1-2 ft.	8.7	8.7	1.7	8.7	-24.6	-25.5	-19.4	-21.6	-9.9	-3.0	-11.1	8.7
3-4 ft.	9.6	6.3	13.0	13.0	-16.0	-5.0	-5.4	-4.1	-7.8	-10.1	-7.9	13.0
5-6 ft.	22.6	22.8	27.2	29.5	16.9	19.5	17.3	18.7	14.5	5.6	16.7	29.5
7 ft.	-1.6	15.6	8.6	15.6	12.9	8.9	8.8	10.9	4.9	-2.2	10.9	15.6
8-9 ft.	0.0	6.9	6.9	6.9	3.6	5.0	3.4	4.8	0.9	0.0	3.4	6.9
10-11 ft.	4.3	4.3	4.3	4.3	3.2	3.9	3.1	2.7	-0.5	-3.0	-7.3	4.3
12 ft.	8.8	2.1	8.8	8.8	8.8	8.8	8.3	8.8	7.8	8.8	4.1	8.8
13-16 ft.	0.9	-2.4	4.3	4.3	4.3	4.3	4.1	4.3	4.3	1.9	0.1	4.3
17-19 ft.	-2.5	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9	-4.9	0.9
20-25 ft.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.0	0.0	-1.2	0.0
26-32 ft.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33-40 ft.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Figure 12. APA atmospheric comparison between test site and operational area (Sheet 1 of 2).

Atmospheric Propagation Data Comparison

Test Area — Month: February NOCD # 3 Color BLUE

Operational Area — NOCD # 3 Color red

TABLE 8

Vis (nm)	J	F	M	A	M	J	J	A	S	O	N	D
10+ no pre	34.3	13.2	13.0	58.3	13.6	-1.6	8.2	11.9	-7.4	12.0	29.1	58.3
10+ w/prec	2.1	2.0	1.4	3.1	3.1	3.1	1.0	3.0	2.2	2.6	3.1	3.1
5-10 no pr	-21.6	-1.7	1.0	15.9	2.2	4.7	-1.0	-8.3	-2.0	-10.5	-10.4	15.9
5-10 w/pre	6.1	6.1	3.9	6.1	2.9	3.3	3.3	1.5	0.9	2.2	1.0	6.1
2-5 no pre	-2.4	-3.8	1.1	3.9	-4.0	1.2	-1.1	-1.1	-0.6	-3.9	-4.9	3.9
2-5 w/prec	-0.2	-4.9	-6.0	5.0	2.9	2.9	2.4	0.0	3.6	-0.2	-5.9	5.0
1-2 no pre	-1.4	0.7	-2.1	0.7	0.7	0.7	-0.7	0.7	0.7	0.7	-1.5	0.7
1-2 w/prec	-4.9	-4.2	-2.0	2.4	2.4	2.4	2.4	0.7	2.4	-1.2	-5.6	2.4
<1 no prec	-4.3	0.9	-4.6	0.9	-19.6	-15.8	-17.3	-8.3	-1.1	0.9	0.9	0.9
<1 w/prec	2.0	-3.5	-3.5	2.0	-0.1	0.8	2.0	2.0	2.0	-0.6	-0.9	2.0

TABLE 9

Vis.(nm)	J	F	M	A	M	J	J	A	S	O	N	D
10+	36.1	13.1	12.1	60.1	14.7	-0.6	9.6	13.3	-6.4	11.9	31.7	60.1
5-10	-15.7	6.8	4.5	21.8	5.0	8.1	2.5	-6.0	-1.0	-5.7	-10.3	21.8
2-5	-2.3	-8.9	-4.8	9.2	-0.5	4.8	1.3	-0.7	3.2	-4.2	-10.9	9.2
1-2	-5.8	-3.6	0.3	3.6	1.4	1.7	2.0	1.3	2.1	-1.2	-6.1	3.6
<1	-1.8	-2.6	-6.6	3.4	-19.8	-14.6	-15.4	-7.4	1.1	0.0	0.4	3.4
Direction	J	F	M	A	M	J	J	A	S	O	N	D
N	-8.9	-11	-3.5	11.2	11.2	11.2	11.2	-2.4	-17	-14	-6.3	11.2
NE	-22.7	-19.0	-19.9	8.8	8.8	8.8	8.8	-8.4	-10.4	-8.8	-25.2	8.8
NW	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	-5.2	-18.0	8.6	8.6
S	11.4	11.4	11.4	11.4	-27.0	-4.7	-6.9	11.4	11.4	11.4	11.4	11.4
SE	15.8	15.8	15.8	15.8	15.8	2.7	-0.9	1.9	15.8	15.8	15.8	15.8
SW	9.6	9.6	9.6	9.6	-17.4	-7.6	-11.7	9.6	9.6	9.6	9.6	9.6
E	4.7	-6.9	2.2	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
W	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8

Figure 12. APA atmospheric comparison between test site and operational area (Sheet 2 of 2).

Atmospheric Propagation Short Comparison

Month FEBRUARY Test Area NOCD # 9 Color BLUE

WHITE 043

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X	X										X
wind												
vis (nm)	X	X	X					X	X	X	X	X
vis. (nm)												
r. hum.												
temp												
low temp	X	X	X									X
high temp	X	X	X	X								
wind												

RED 001

	J	F	M	A	M	J	J	A	S	O	N	D
weather									X	X		
wind												
vis (nm)								X	X	X		
vis. (nm)												
r. hum.												
temp								X				
low temp								X				
high temp												
wind												

RED 003

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X	X	X								X	
wind												
vis (nm)	X	X	X					X		X	X	
vis. (nm)	X										X	
r. hum.												
temp					X							
low temp												
high temp	X				X					X	X	
wind												

WHITE 040

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X		X		X					X	X	X
wind												
vis (nm)				X	X		X	X		X	X	X
vis. (nm)	X							X				
r. hum.												
temp					X						X	
low temp				X							X	
high temp				X							X	
wind												

WHITE 041

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X	X	X									
wind												
vis (nm)	X		X			X	X					X
vis. (nm)												
r. hum.												
temp	X	X	X	X								X
low temp				X							X	
high temp			X									X
wind												

WHITE 049

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X	X	X	X							X	
wind												
vis (nm)	X	X									X	X
vis. (nm)	X										X	
r. hum.												
temp	X				X						X	
low temp	X			X								
high temp	X		X	X							X	
wind												

RED 002

	J	F	M	A	M	J	J	A	S	O	N	D
weather									X	X		
wind												
vis (nm)									X	X		
vis. (nm)												
r. hum.												
temp									X			
low temp								X				
high temp												
wind												

WHITE 042

	J	F	M	A	M	J	J	A	S	O	N	D
weather												
wind	X		X								X	X
vis (nm)	X	X	X	X						X	X	X
vis. (nm)	X	X										
r. hum.												
temp												
low temp	X											X
high temp			X									
wind			X									

Figure 13. APA atmospheric comparison (Sheet 1 of 2).

Atmospheric Propagation Short Comparison

Month FEBRUARY   Test Area NOCD # 9   Color BLUE

WHITE 046

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X	X	X		X					X	X	X
wind		X	X									
vis (nm)	X	X	X	X	X	X	X	X	X	X	X	X
vis. (nm)	X	X	X	X						X	X	X
r. hum.					X							
temp	X	X	X	X							X	X
low temp			X							X		
high temp			X	X								X
wind												

WHITE 050

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X	X	X	X							X	X
wind											X	
vis (nm)	X	X	X	X	X	X	X	X	X	X	X	X
vis. (nm)	X	X	X	X	X	X	X				X	X
r. hum.												
temp												
low temp												
high temp	X	X	X									
wind				X								

RED 007

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X	X	X	X							X	X
wind												
vis (nm)	X	X										
vis. (nm)												
r. hum.												
temp											X	
low temp				X								
high temp												X
wind												

RED 006

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X	X	X	X	X						X	X
wind												
vis (nm)	X	X	X	X	X	X		X	X	X	X	X
vis. (nm)	X	X	X	X								X
r. hum.		X										
temp				X							X	X
low temp												
high temp		X		X								
wind			X								X	X

RED 011

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X	X	X	X	X						X	X
wind												
vis (nm)	X	X	X	X	X	X			X	X	X	X
vis. (nm)	X	X	X	X	X						X	X
r. hum.												
temp				X								X
low temp				X								X
high temp	X											X
wind	X	X									X	

RED 010

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X	X		X							X	X
wind	X											
vis (nm)	X	X			X						X	X
vis. (nm)												
r. hum.												
temp											X	
low temp					X							
high temp			X									X
wind												

RED 014

	J	F	M	A	M	J	J	A	S	O	N	D
weather	X									X	X	X
wind												
vis (nm)								X		X	X	X
vis. (nm)											X	
r. hum.										X		
temp					X							
low temp					X					X		
high temp												
wind												

Figure 13. APA atmospheric comparison (Sheet 2 of 2).

April:	Adak Island (19) Dutch Harbor (19) Unimak (18)
May:	Unimak (16) Seward (2)
June:	Dutch Harbor (8)
July:	St. Lawrence (6) Dutch Harbor (5) Seward (5)
August:	Cape Lisburne (15) Dutch Harbor (8)
September:	Seward (15) Adak Island (8)
October:	Adak Island (10)
November:	Seward (18) Unimak (18) Adak Island (14)
December:	Dutch Harbor (25) Unimak (21)

The month of February was chosen to perform the 50° North APA tests. From analysis of the test site criterion, the test site chosen was Adak Island, Alaska.

For the selection of the high humidity test site, the data parameters were reduced to those most relevant: temperature, relative humidity and wind speed. The worksheet used for each high humidity operational area and potential test site is shown in figure 14. The top 20 test sites were determined based on their relative humidity and wind speed. For comparison, a top 20 list was also generated for U.S locations. The sites were evaluated based on relative humidity during average temperature ranges from 75 to 109 degrees F. Consistent with the Photonics Mast Program's Mission Effectiveness Analysis, only certain areas of the world were considered in detail. The goal was to find the site with an extremely high relative humidity, high temperatures, and stagnant air flow (low wind speeds). This reduced the number of test areas to the Caribbean, U.S. East and Gulf coasts, North and South Pacific Seas, Chinese-Philippine Seas, and Indonesian Seas. The months of June through September were the time frame that was chosen for the test period.

During this test period, the South Pacific and Indonesian Seas tended to dominate the top 20 ranking in wind speeds of 0 to 30 knots and 0 to 10 knots. This data show that 80% to 90% of the time in these areas, the wind speed is less than 3 knots; for example, the top twenty spreads from 45% to 22%, but the data drops fast to the mid-twenties with

Location	Pensacola
Latitude	28.2N
Longitude	87.7W
Month	September
NOCD Book	Blue - 4
NOCD Area	26

TABLE 3

Wind	%
0-3 kts	8.7
4-10 kts	43.2
11-21 kts	40.4
22-33 kts	7.0
34-47 kts	0.7
>48 kts	

TABLE 13

	Relative Humidity		
Temp F	70-79%	80-89%	90-100%
105-109			
100-104			
95-99			
90-94	0.3	0.1	
85-89	7.4	1.5	0.4
80-84	29.5	23.4	4.3
75-79	5.3	5	4.1

Figure 14. APA atmospheric data sheet condensed.

the bulk of the areas in this range. The 0- to 20-knot case shows a similar trend, with the differences between the high end at 90% verses low end of the United States data at 65%. Couple these differences to the trend of the wind speeds dying out when it rains in the South Pacific, the Indonesian, and the Chinese-Philippine Seas, and the differences become even smaller. It was concluded that no matter which one of the APA test sites was chosen, it would have a wind speed of 0 to 3 knots for a quarter of the time, and less than 10 knots for three-quarters of the time.

The primary concentration of the analysis was on the results of relative humidity measurements, table 13. Based on the test site criterion analysis, the "best sites" were in the South Pacific. As shown in figure 15, cost and support were the main factors for not choosing a top twenty world site. The top United States sites showed that the relative humidity was between 80% to 90% about half the time (figure 16). Since the data was so similar, ten sites were considered as shown in figure 17. The cost, support, water depth and geometry were the factors that led to the choice of Pensacola, Florida, as the APA test site.

Humid Atmospheric Areas
Test Area Comparison

TOP 1-10

TABLE 3 Wind Speed

Location	Admiralty Islands East	Admiralty Islands East	Melville Island	Solomon Islands S.W.	Melville Island	Melville Island	Solomon Islands S.W.	Timor Northwest	New Hebrides Islands	North Makassar Strait
Month	July	August	September	September	August	July	July	September	July	September
0-3 kts	44.7	42.6	38.6	37.1	35.7	33.3	32.9	32.2	31.5	31.3
Location	North Makassar Strait	Admiralty Islands East	Admiralty Islands East	Admiralty Islands East	North Makassar Strait	Timor Northwest	North Makassar Strait	Solomon Islands S.W.	Nauru & Ocean Islands	Melville Island
Month	September	August	September	July	August	September	July	September	September	September
0-10 kts	92.4	90.9	90.9	90.3	89.3	88.5	87.6	86.9	85.6	84.0

TABLE 13 Relative Humidity (7[illegible]-109 degrees F)

Location	Majuro	Solomon Islands S.W.	Solomon Islands S.W.	Solomon Islands S.W	Solomon Islands NE	Solomon Islands NE	New Hebrides Islands	Gulf of Panama	Gulf of Panama	Gulf of Panama
Month	September	August	July	September	September	August	July	July	September	August
90-100%	51.0	44.5	38.2	32.7	31.7	31.3	30.9	26.3	25.8	25.5
Location	Solomon Islands S.W.	Gulf of Panama	Solomon Islands S.W.	Gulf of Panama	Gulf of Panama	Solomon Islands NE	Gulf of Venezuela	Solomon Islands NE	Gulf of Venezuela	Solomon Islands S.W.
Month	August	July	July	August	September	September	July	July	August	September
80-100%	83.6	81.8	80.2	79.3	78.7	77.2	76.7	75.4	75.2	75.1
Location	Funafuti Atoll	Funafuti Atoll	Majuro	Gulf of Panama	Gulf of Venezuela	Solomon Islands NE	Southeast Molucca Sea	Gulf of Venezuela	Gulf of Panama	Manila Bay
Month	July	September	August	July	August	July	August	July	September	August
70-100%	100.0	100.0	98.6	98.0	97.9	97.7	97.6	97.5	97.5	97.5

Figure 15. Top 20 APA humid test sites (Sheet 1 of 2).

Humid Atmospheric Areas
Test Area Comparison

TOP 11-20

TABLE 3 Wind Speed

Solomon Islands S.W.	North Makassar Strait	North Makassar Strait	Majuro	New Hebrides Islands	Nauru & Ocean Islands	New Hebrides Islands	New Caledonia	Koror	Apalachicola
August	August	July	September	September	September	August	August	July	August
30.4	28.6	28.2	28.0	27.0	25.7	24.8	23.5	22.9	22.1
Gulf of Panama	Gulf of Panama	Nauru & Ocean Islands	Gulf of Panama	Solomon Islands S.W.	Bangka Island NW	New Ireland Northeast	Timor Northwest	Nauru & Ocean Islands	Melville Island
August	September	July	July	August	September	September	August	August	August
83.8	83.2	83.0	82.8	82.8	82.3	81.9	81.8	81.6	81.5

TABLE 13 Relative Humidity (75-109 degrees F)

No. Solomon Sea	Admiralty Islands East	New Hebrides Islands	Manila Bay	Koror	New Hebrides Islands	Solomon Islands NE	Gulf of Venezuela	Majuro	Norfolk
July	September	August	August	September	September	July	July	July	July
25.2	25.2	25.1	23.5	22.8	22.5	22.4	21.8	21.7	21.4
Manila Bay	Majuro	Manila Bay	North Makassar Strait	Koror	Gulf of Venezuela	Southeast Solomon Sea	Guam	Northeast Bauda Sea	Guam
August	September	September	August	September	September	July	August	August	September
74.2	73.8	71.6	70.6	70.5	70.2	69.3	69.2	67.6	67.5
Guam	Kwajalein	Southeast Molucca Sea	Guam	Majuro	Solomon Islands NE	Northwest Flores Sea	Solomon Islands S.W.	No. Solomon Sea	Bangka Island NW
August	July	July	September	September	September	September	August	July	July
97.4	97.3	97.2	97.2	97.1	97.0	97.0	96.9	96.8	96.8

Figure 15. Top 20 APA humid test sites (Sheet 2 of 2).

Humid Atmospheric Areas

Test Area Comparison (States)

TOP 1-10

TABLE 3 Wind Speed

Location	Apalachicola	Apalachicola	Fort Myers	Fort Myers	New Orleans	Pensacola	Pensacola	New Orleans	Guantanamo	Key West
Month	August	July	August	July	July	July	August	August	September	August
0-3 kts	22.1	21.0	20.2	18.7	17.9	16.7	16.7	15.8	15.7	15.5
Location	Apalachicola	New Orleans	Apalachicola	Fort Myers	Fort Myers	Pensacola	Galveston	New Orleans	Pensacola	Galveston
Month	August	July	July	August	July	July	August	August	August	July
0-10 kts	78.0	76.3	76.3	75.9	75.5	73.3	73.2	73.0	72.4	71.5

TABLE 13 Relative Humidity (75-109 degrees F)

Location	Norfolk	Norfolk	Cape Hatteras	Cape Hatteras	Charleston	Bermuda	Bermuda	Bermuda	Charleston	Miami
Month	July	August	July	August	July	July	September	August	August	September
90-100%	21.4	19.9	17.1	15.0	14.6	14.0	13.4	12.6	12.6	11.7
Location	Charleston	Bermuda	Cape Hatteras	Bermuda	Norfolk	Charleston	Norfolk	Cape Hatteras	Bermuda	Fort Myers
Month	July	August	July	July	July	August	August	August	September	September
80-100%	54.0	52.8	52.4	52.0	50.9	50.1	49.6	49.1	48.1	47.0
Location	Corpus Christi	Corpus Christi	Bermuda	Bermuda	Jacksonville	Key West	Fort Myers	Charleston	Guantanamo	Jacksonville
Month	July	August	July	August	July	September	September	July	July	August
70-100%	90.7	89.4	89.3	89.3	88.9	88.5	87.8	87.7	87.2	87.1

Figure 16. Top 20 U.S. APA humid test sites (Sheet 1 of 2).

Humid Atmospheric Areas
Test Area Comparison (States)

TOP 11-20

TABLE 3 Wind Speed

Galveston	Bermuda	Miami	San Diego	Galveston	San Diego	Miami	Key West	San Diego	Bermuda
August	August	August	August	July	September	July	July	July	July
14.7	14.6	14.5	14.4	14.2	14.2	13.9	13.8	12.8	12.6
Miami	Miami	Key West	Guantanamo	Bermuda	Key West	San Diego	San Diego	Bermuda	San Diego
July	August	August	September	August	July	August	July	July	September
71.4	70.6	70.3	68.3	67.3	67.3	67.1	66.8	65.5	64.7

TABLE 13 Relative Humidity (75-109 degrees F)

Charleston	Fort Myers	New Orleans	Norfolk	Corpus Christi	Jacksonville	Galveston	Jacksonville	Jacksonville	Cape Hatteras
September	September	September	September	July	September	September	July	August	September
11.3	10.8	10.0	9.8	9.7	9.6	9.6	9.5	9.4	9.4
Corpus Christi	Jacksonville	Jacksonville	Miami	Key West	New Orleans	Guantanamo	Miami	Miami	Corpus Christi
July	July	August	September	September	September	July	August	July	August
46.8	46.6	46.3	46.2	43.3	42.0	41.9	41.6	41.6	41.2
Miami	Guantanamo	Miami	Miami	Charleston	Pensacola	Apalachicola	Key West	Apalachicola	Pensacola
September	September	August	July	August	July	September	July	August	August
86.7	86.4	86.1	86.1	85.6	85.4	85.0	85.0	84.9	84.1

Figure 16. Top 20 U.S. APA humid test sites (Sheet 2 of 2).

Top Ten World High Humidity Test Sites

#	Site	Month	Air Fare	Shipping	Base Support	BOQs	Lodging Per deim	Misc. Per deim	Trans	Gas Nitro	Liq. Nitr	Gas	H/W	Medical	H20 Depth	Forklif	Power	Security?	Site Geometry
1	Majuro, Marshall Is.	Sept, July	$1,374	$13,000	None	No	$97	$46	Boat	$1,000	$1,500	Ok	High	Yes	Ok	Comm	Yes	?	Good
2	Kieta, Solomon Islands	Aug, July, Sep	$1,934	n/a*	None	No	$63	$34	Boat	[illegible]	[illegible]	No	High	Yes	Ok	Comm	No	?	Good
3	Rio Hato, Panama	Aug, Sept	$998	$13,000	Howard AFB	Yes	$75	$57	Car	$1,000	$2,000	Ok	Ok	Yes	No	Gov	Yes	Ok	No Good
4	Baurfield, New Hebrides I	July, Aug, Sep	$2,790	n/a*	None	No	$63	$34	Boat	[illegible]	[illegible]	No	High	Yes	Ok	Comm	No	No	Good
5	Maracaibo, Venezuela	July, Aug, Sep	$1,270	$16,000	None	No	$90	$36	Car	[illegible]	[illegible]	Ok	Ok	No	Ok	Comm	Yes	[illegible]	Good
6	Admirality Islands	Sept	$2,060	n/a*	None	No	$132	$71	Boat	[illegible]	[illegible]	No	High	No	Ok	Comm	No	No	Good
7	Subic Bay, Philippines	Aug, Sept	$998	$10,000	Subic Bay NAVBAS	Yes	$28	$22	Car	$1,000	$2,000	Ok	Ok	Yes	Ok	Gov	Yes	?	Good
8	Koror, Palau	Sept	$1,509	$12,500	None	No	$121	$66	Boat	$1,000	$1,500	No	High	No	Ok	Comm	No	No	Good
9	Nimitz Hill, Guam	Aug, Sept	$1,098	$12,500	Guam NAVBAS	Yes	$112	$75	B, $1500	$0	$0	Ok	Ok	Yes	Ok	Gov	Yes	Ok	Good
10	Bermuda NAS, Bermuda	Sept	$600	$11,000	Bermuda NAS	Yes	$54	$43	Car	$750	$1,500	Ok	Ok	Yes	Ok	Gov	Yes	Ok	Good

Top Ten U.S. High Humidity Test Sites

#	Site	Month	Air Fare	Shipping	Base Support	BOQs	Lodging Per deim	Misc. Per deim	Trans	Gas Nitro	Liq. Nitr	Gas	H/W	Medical	H20 Depth	Forklif	Power	Security?	Site Geometr
1	Bermuda NAS, Bermuda	July, Sept, Au	$600	$11,000	Bermuda NAS	Yes	$54	$43	B, $1500	$750	$1,500	Ok	Ok	Yes	Yes	Gov	Ok	Ok	Good
2	Fort Meyers, Florida	Sept	$734	$9,000	none	No	$74	$26	Car	$520	$200	Ok	Ok	Yes	?	Comm	Ok	?	Good
3	Miami, Florida	Sept, Aug, Jul	$394	$7,600	Homestead AFB	Yes	$63	$34	Car	$520	$200	Ok	Ok	Yes	No	Gov	Ok	?	Good
4	New Orleans, Louisiana	Sept	$300	$6,400	New Orleans NAS	Yes	$65	$34	Car	$520	$200	Ok	Ok	Yes	No	Gov	Ok	?	No Good
5	Charleston, S. Caroline	July, Aug, Sep	$548	$8,000	Charleston AFB	Yes	$59	$26	Car	$520	$200	Ok	Ok	Yes	No	Gov	Ok	Ok	No Good
6	Norfolk, Virginia	July, Aug, Sep	$672	$6,200	Norfolk NAS	Yes	$68	$26	Car	$520	$200	Ok	Ok	Yes	Yes	Gov	Ok	Ok	No Good
7	Key West, Florida	Sept	$472	$8,400	Key West NAS	Yes	$123	$34	B, $1500	$520	$200	Ok	Ok	Yes	Yes	Gov	Ok	Ok	Good
8	Jacksonville, Florida	Sept, July, Au	$376	$8,000	Jacksonville NAS	Yes	$49	$26	Car	$520	$200	Ok	Ok	Yes	No	Gov	Ok	Ok	No Good
9	Cape Hatteras, N. Carolin	July, Aug, Sep	$672	$8,000	Coast Guard	No	$71	$26	Car	$520	$200	Ok	Ok	Yes	No	Comm	Ok	Ok	No Good
10	Pensacola, Florida	Sept	$400	$7,200	Pensacola NAS	Yes	$54	$36	B, $1500	$520	$200	Ok	Ok	Yes	Yes	Gov	Ok	Ok	Good
	Chesapeake Bay (?)	Sept	$451	$6,500	Many	Yes	$99	$26	B, $1500	$520	$200	Ok	Ok	Yes	Yes	Gov	Ok	Ok	Good

N Ranking included Aug/Sept as the driving criterion.
Months are in order of high and low humidity.
Airfare is based on round-trip fares per person. (Government fares where available)
Shipping costs for 9000 lbs. These estimates come from the NCCOSC RDT&E Shipping Dept.
*Shipping costs would be based on a chartered ship and crew. No established route.

Figure 17. Logistics comparison for APA humid test sites.

2.5.2 Experiment 1

Experiment 1 represents the transmittance measurements conducted with a collimator and IR spectroradiometer system over a water path close to the ocean path. This test configuration has the collimator system placed as low as possible on one beach inlet. The IR spectroradiometer is placed on another beach that is across an ocean path that has a depth of greater than 50 feet. The height of the IR Spectroradiometer was controllable from 6 inches to 12 feet. Laboratory measurements and in-field measurements with the equipment have shown that alignment of the collimator's optical axis with that of IR Spectroradiometers is crucial. This alignment must be set and maintained to an accuracy of 0.3 milliradians. The most accurate alignment procedure is to align both collimators to the spectroradiometer at peak signal when beginning each test, then optically sight these alignment points (re-zero the optical sights), and proceed to use these sights moving from collimator to collimator. The peak alignment is rechecked at the end of every 10 sets of measurements.

Experiment 1 of the APA program employed a rather unique set of instruments and gear; for example, the atmospheric transmittance measurements in the 3- to 5- and 8- to 14-micron wavelength regions. For Experiment 1, the equipment test setup in Adak, Alaska, and Pensacola, Florida, is diagramed in figures 18 and 19, respectively. Much of this equipment was calibrated at the factory; the experimental technique and equipment calibration were verified at NCCOSC RDT&E laboratories and at local APA deployments in San Diego, California. The full equipment list is as follows:

A. Infrared Spectroradiometer: The Infrared Spectroradiometer, CI Systems (Model SR-5000) shown in figure 20, was used in support of Experiment 1. This spectroradiometer covers the 1.0- to 14.5-micron wavelength regions of the electromagnetic spectrum. The primary components of this instrument, shown in figure 21, are a 5-inch primary mirror, a secondary (focusing mirror), a chopper, an internal blackbody source, a circular variable filter wheel, and a sandwich detector (with Dewar).

   The 5-inch primary mirror collects radiation from a light source and focuses this light on the chopper which is the first focal plane of the system. The light then passes through a field stop aperture that defines the systems field of view and the light passes through the circular variable filter monochromator. The light is then brought back to focus by an ellipsoidal mirror onto the detector. The AC output of the detector is in volts as a function of wavelength. This AC signal is combined with the synchronous reference signal from the chopper via a synchronous detection circuit to obtain the raw DC signal (DC Restored Technique). This raw DC signal is then digitized and transferred to the computer for processing to obtain the quantified measure of the spectral radiant emittance of the source; for example, the signal response S of the source per steradian. This signal is finally displayed on the monitor in volts per wavelength (microns).

   The displayed signal response S has been mathematically corrected. These mathematical corrections are incorporated internally in the SR-5000 system computer processing. The goal of these corrections is to determine spectral radiance of the target,

given the (raw) measured spectral radiant emittance of the target and a system response calibration function that is obtained by using the SR-5000s' internal reference blackbody source. It should be noted that this internal reference blackbody source must be kept factory calibrated. CI Systems recommends that the internal reference blackbody source be checked every 6 months, and that the blackbody sources in the collimators be re-calibrated once a year. This calibration requirement applies to all collimators used in this test project.

CI System's spectral calibration concept is based on the specific design of the instrument. Again, the goal is to quantitatively measure the precise amount of light falling on the detector from a distant source. To measure this, the chopper obstructs the field of view of the target; such, that the SR-5000's internal reference blackbody source radiation now falls on the detector. The temperature of the reference blackbody source is constantly monitored and digitally stored by the computer to perform the spectral calibration calculations; thus, the signal response S is converted to signal level at the output per unit radiance of a source filling the field of view.

The APA experimental procedure follows the CI Systems spectral calibration concept; but it is modified slightly because the field of view is not filled and two chopped collimators and blackbody sources are operating at the same temperature (1000°C). The following is an abbreviated list of specifications of the main components in the CI Systems Infrared Spectroradiometer (Model SR-5000).

1. Optical System - In figure 21, the optical design shown is Newtonian; for example the SR-5000 uses a three mirror, purely reflective, optical system to perform its function. Since there is a minimum number of reflective elements, losses through this system can be considered to be extremely small. The design does not require lens changes while sweeping through the entire wavelength region. The primary aperture is 5-inch diameter, on-axis, parabolic mirror with a focal length of 500 mm (f#=4.0). The secondary mirror is a 45-degree, flat elliptic mirror matched to the cone of light at close focus. The final mirror in this optical system is an ellipsoidal mirror which refocuses the diverging light from the CVF plane onto the center of the detector. The alignment of these non-moving elements is such that the center of the field stop and the detector are on the foci of the ellipsoid of revolution of the mirror.

2. InSb/MCT Sandwich Detector -This Indium Antimonide (InSb)—Mercury Cadmium Telluride (MCT) sandwich detector measures the infrared spectrum; for example, from 1.0 microns to 14.5 microns, all in one scan of the CVF. This capability means that the detector does not have to be changed in mid-experiment. This InSb/MCT sandwich detector incorporates a logic circuit; such, that the wavelength is being swept from 1.0 microns to 14.5 microns; the logic circuit switches the output of the detector at the most optimum wavelength. Each of these detectors have their own dedicated and matched preamplifier circuits so

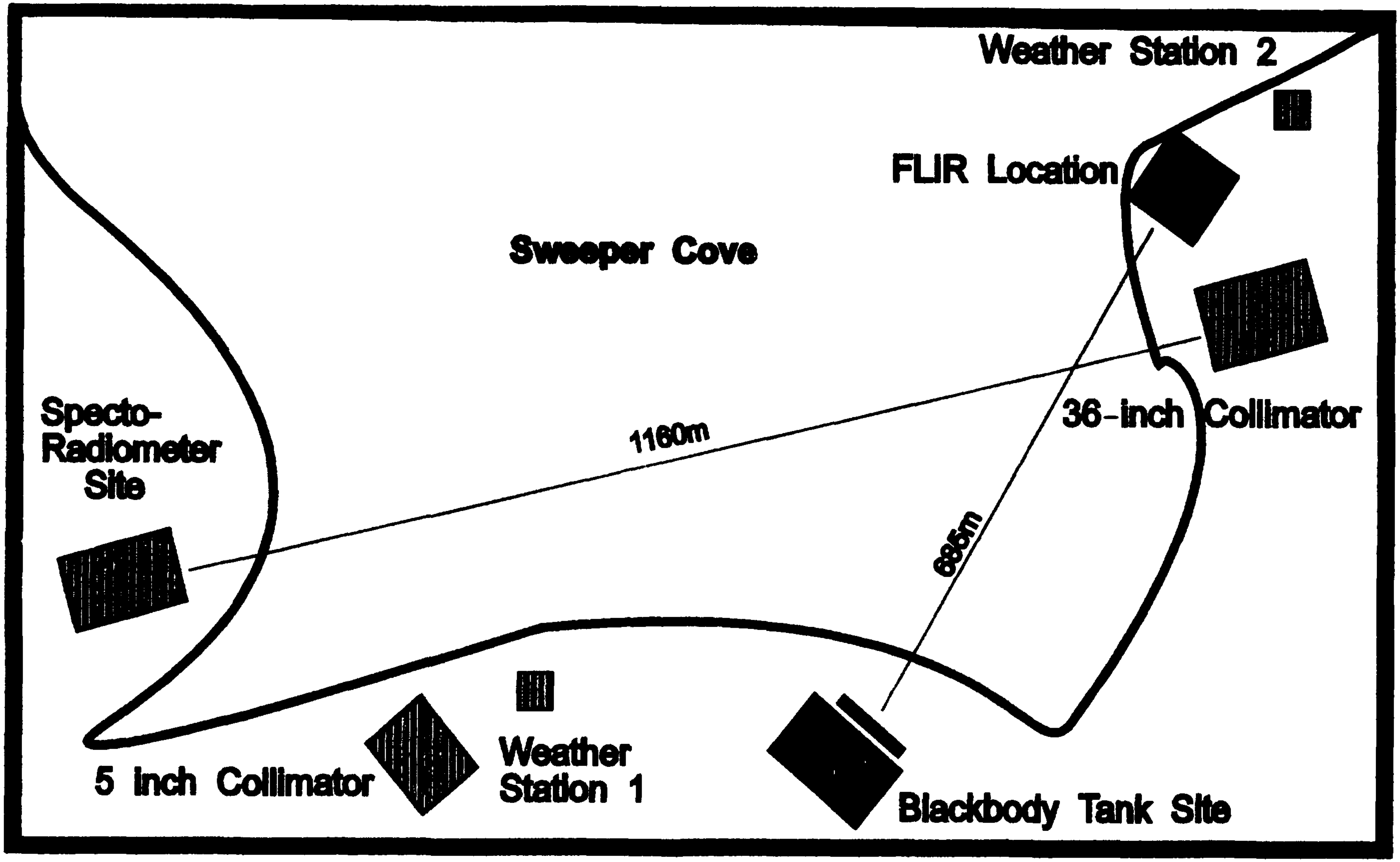


Figure 18. APA test setup, Adak, AK (Sweeper Cove).

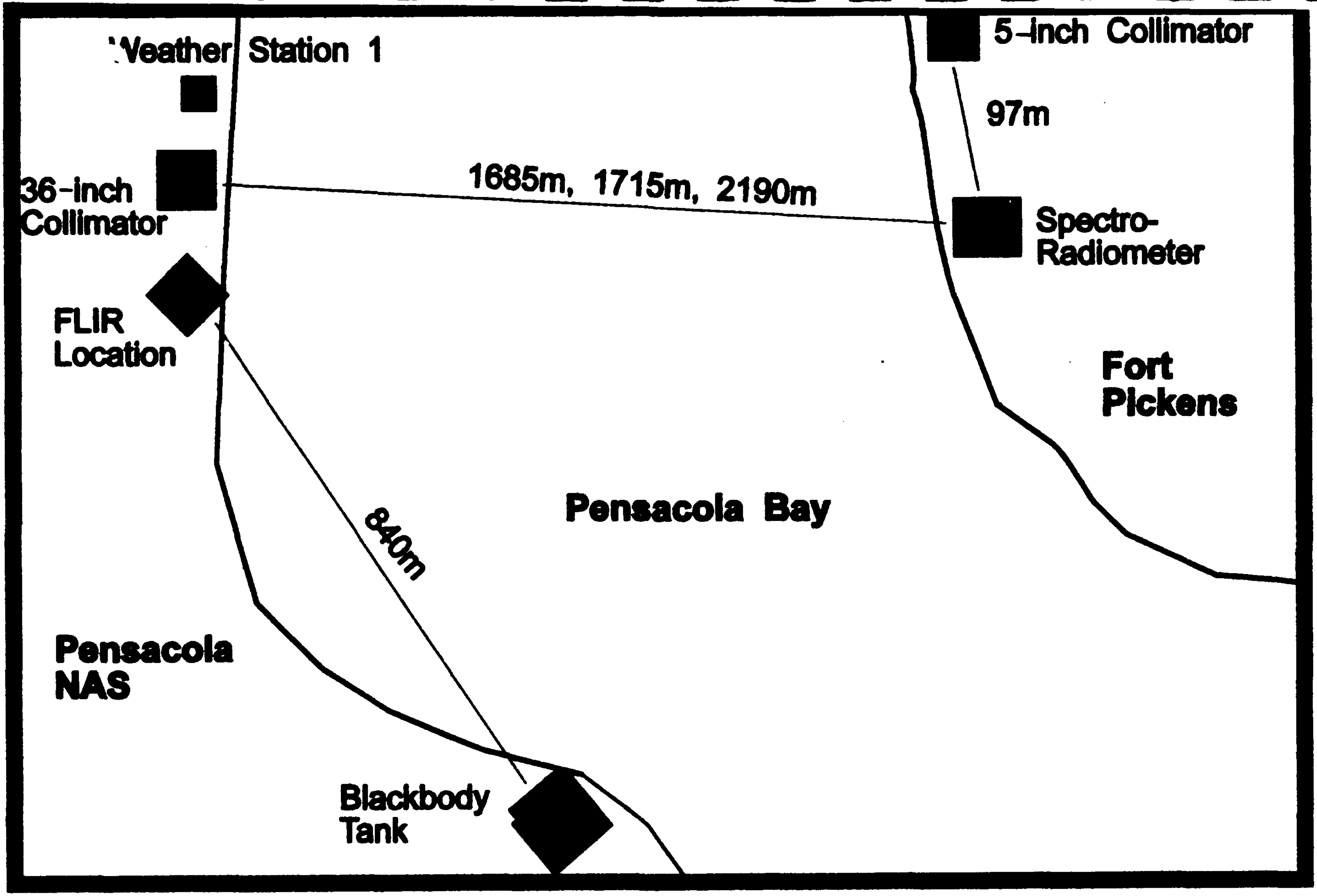


Figure 19. APA test site, Pensacola, FL.

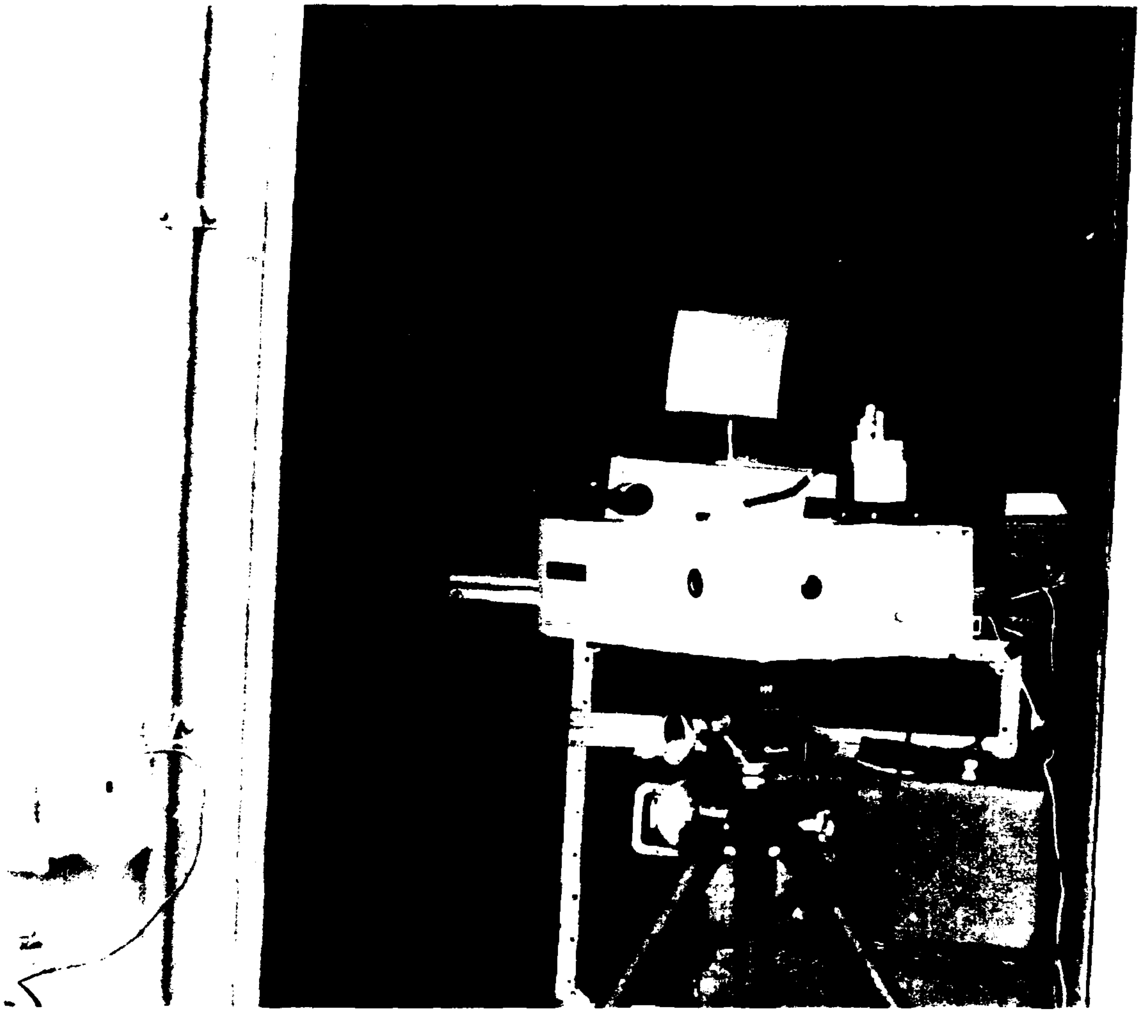


Figure 20. CI systems IR spectroradiometer.

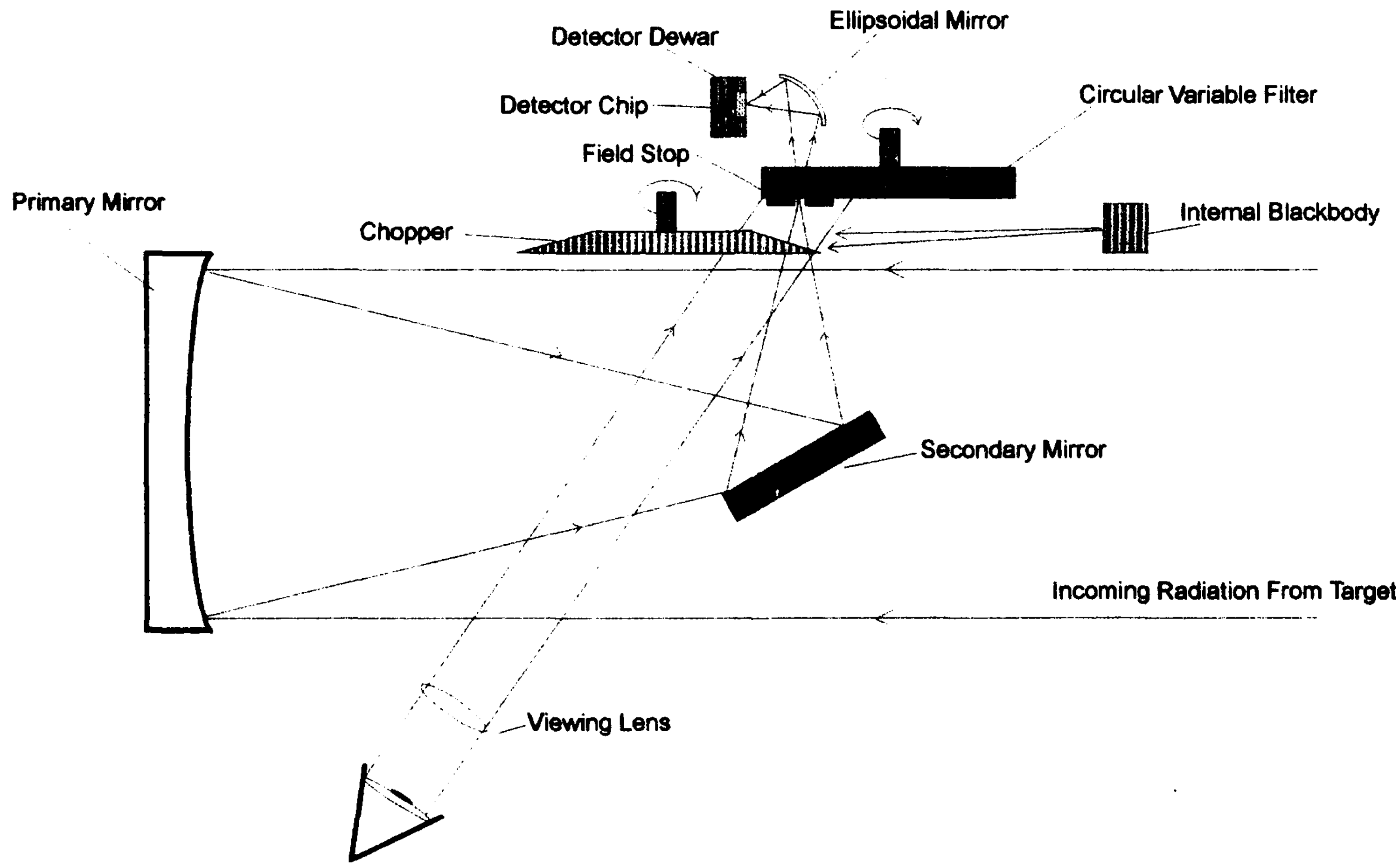


Figure 21. Optical design of infrared spectroradiometer.

that responsivity in both bands are maximized. Due to the interface between the sandwich detectors, there are some losses up to a factor of 2, but given there is enough signal to measure (for example, the selected APA range is not too great), then the benefits of this detector design for the measurement of atmospheric transmittance far outweigh its disadvantages. The detectivities for both the InSb and MCT detectors are shown in figures 22 and 23 respectively.

3. Liquid Nitrogen Dewar - Both the InSb and MCT detectors require operation at liquid nitrogen temperatures; for example, at 77°K. The CI systems detector Dewar is a common infrared detector design with many available industry sources. The available Dewar functions by holding a vacuum between the detector element and the cold finger to retard detector window condensation problems. The Dewar is designed to maintain this vacuum for over 9 months without the need for repumping. The Dewar can hold a quantity of liquid nitrogen for a period of 7 to 8 hours depending on the environmental conditions.

4. Circular Variable Filter - As discussed in the optical design section, the SR-5000 optics are completely reflective; thus, no dispersive elements are incorporated in this subcircuit of the spectroradiometer's design. To be a spectroradiometer, the light must be quantitatively dispersed by a grating or a prism. The SR-5000 performs this with an infrared Circular Variable Filter (CVF) wheel. The CVF is a continuous set of infrared filters that are located along the circumference of the filter wheel. The quantitative measurement of the wavelength variation is determined as a function of the angle of rotation of the CVF wheel as shown in figure 24. The CVF scan rate ranges from 0 (in radiometric mode only) or from 0.5 to 64 seconds per revolution in the spectral mode. The CVF incorporated in the APA SR-5000 is the CVF-6 filter and is broken down into 3 CVF regions as shown in figure 25. Region I covers the wavelength region from 2.5 to 4.5 microns with a maximum spectral resolution of 1.35% inside this region. Region II covers the wavelength region from 4.5 to 8.0 microns with a maximum spectral resolution of 1.35%. Region III covers the wavelength region from 8.0 to 14.5 microns with a maximum spectral resolution of 1.80%.

5. Chopper - The model SR-5000 incorporates a chopper wheel located just in front of the field stop. The ends of the aluminum blades are polished and angled such that they reflect the radiation coming from the internal blackbody to the detector at a zenith angle of 90°.

B. Collimator Systems:

1. 36-inch Collimator - The APA experimental technique uses two-collimated-blackbody sources operating at the same temperature. The long range target collimator, made by Space Optics Research Laboratories (SORL), is a 36-inch diameter, clear aperture collimator with a 63-inch focal length optical system coupled to a CI Systems (Model SR-20-33) Blackbody Source. The collimator

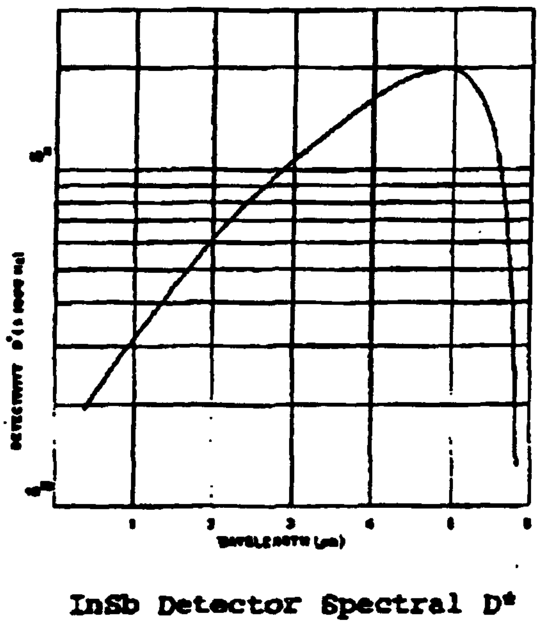


Figure 22. InSb detector spectral D*.

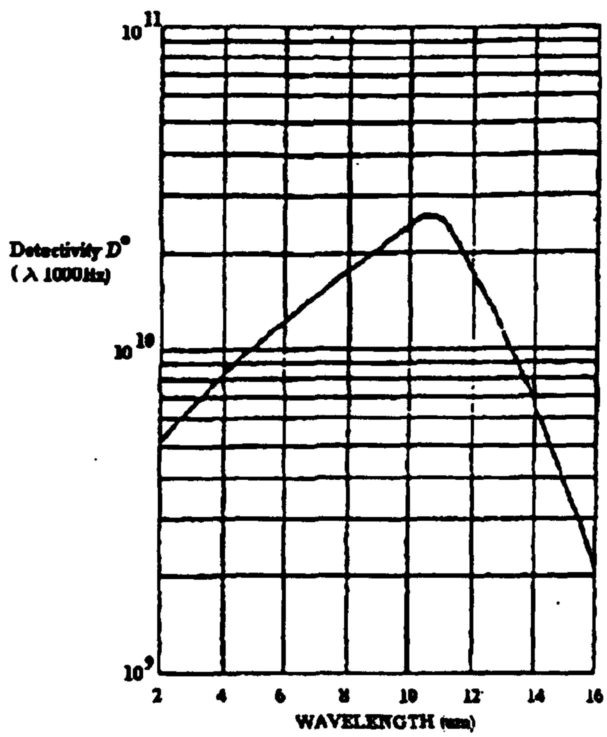


Figure 23. MCT detector spectral D*.

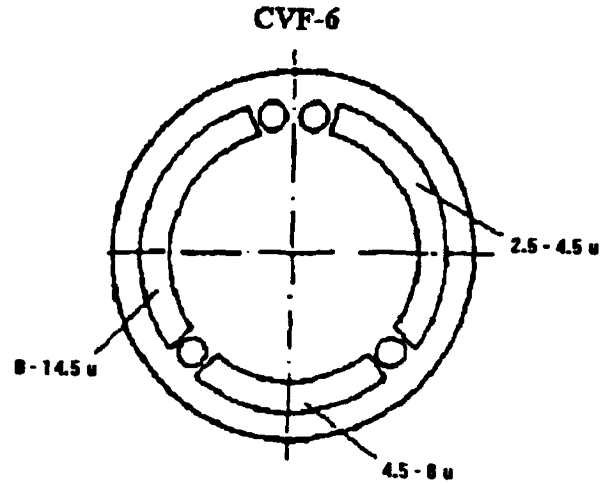
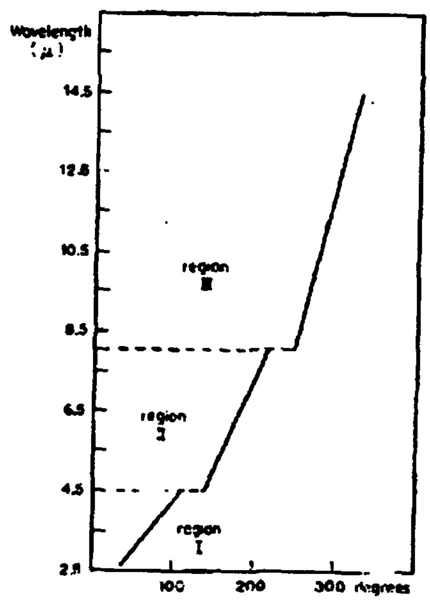


Figure 24. Circular variable filter geometry.



Wavelength as a Function of CVF-6 Angle of Rotation

Figure 25. Circular variable filter—wavelength versus angle of rotation.

system, shown in figure 26, incorporates a two-optical element, Cassegrian telescope with a 36-inch diameter, on-axis, parabolic mirror and a 6.5-inch focusing secondary mirror. Physically, the collimator system encompasses a 36-inch diameter cylinder that is roughly 6 feet high and weighs approximately 200 pounds. The CI Systems Blackbody Source has a 1-inch diameter cavity with a temperature range of 50° to 1200°C at emissivity of no lower than 0.99 + 0.01. The temperature accuracy of the blackbody source is ±0.25°C for temperatures between 50° to 900°C, and ±1.5°C for temperatures between 900° to 1200°C. The recommended re-calibration time is once a year at the factory.

2. 5-inch Collimator - The short range collimator incorporates a 5-inch diameter, clear aperture collimator, CI Systems (Model SR-9) with a 38-inch focal length optical system coupled to a CI Systems (Model SR-2-33) Blackbody Source shown in figure 27. This collimator system incorporates a two optical element Newtonian telescope system with a 5-inch diameter, off-axis, parabolic mirror and a 1.5-inch focusing secondary mirror. Physically, the collimator system encompasses a 5-inch diameter cylinder that is roughly 3 feet high and weighs approximately 100 pounds. The CI Systems Blackbody Source has a 1-inch diameter cavity with a temperature range of 50° to 1200°C at emissivity of no lower than 0.99 + 0.01. The blackbody sources temperature accuracy is ±0.25°C for temperatures between 50° to 900°C and ±1.5°C for temperatures between 900° to 1200°C. The recommended re-calibration time is once a year at the factory.

C. Telemetry Link: Both the 36-inch and the 5-inch collimator signals are chopped for better signal-to-noise response. The 36-inch target collimator uses a Pacific Advanced Engineering (PAE), Model TRS-1A, transmitter operating at 2.5 GHz coupled to a PAE matched receiver (Model TRS-1A) located at the spectroradiometer. Calibration of the collimators proved to be a large source of error. To reduce this error, the 5-inch collimator was hard wired to the spectroradiometer.

Calibration of this transmissometry equipment is one of the more important factors to consider. After many attempts of various calibration techniques, it was found that the detector is very sensitive to changes in the field of view. This is because of the uniformity of the response across the detector. Through laboratory testing, it was found that the best results were achieved when the detector's optical axis and the collimator's axis are perfectly aligned, and a field of view is selected; such, that it does not use more than one-third (center third) of the detector. For calibration purposes at each APA Test Site, measurements with the 36- and 5-inch collimators were taken at a relatively close distance so that there was negligible transmittance losses due to the intervening atmosphere. This allows measurement of a system response function that is obtained by filling the detector the same amount as occurred during the longer range testing. The ratios of these response functions will serve as the measured system conversion factor. The mathematical proof is shown in the following equations:

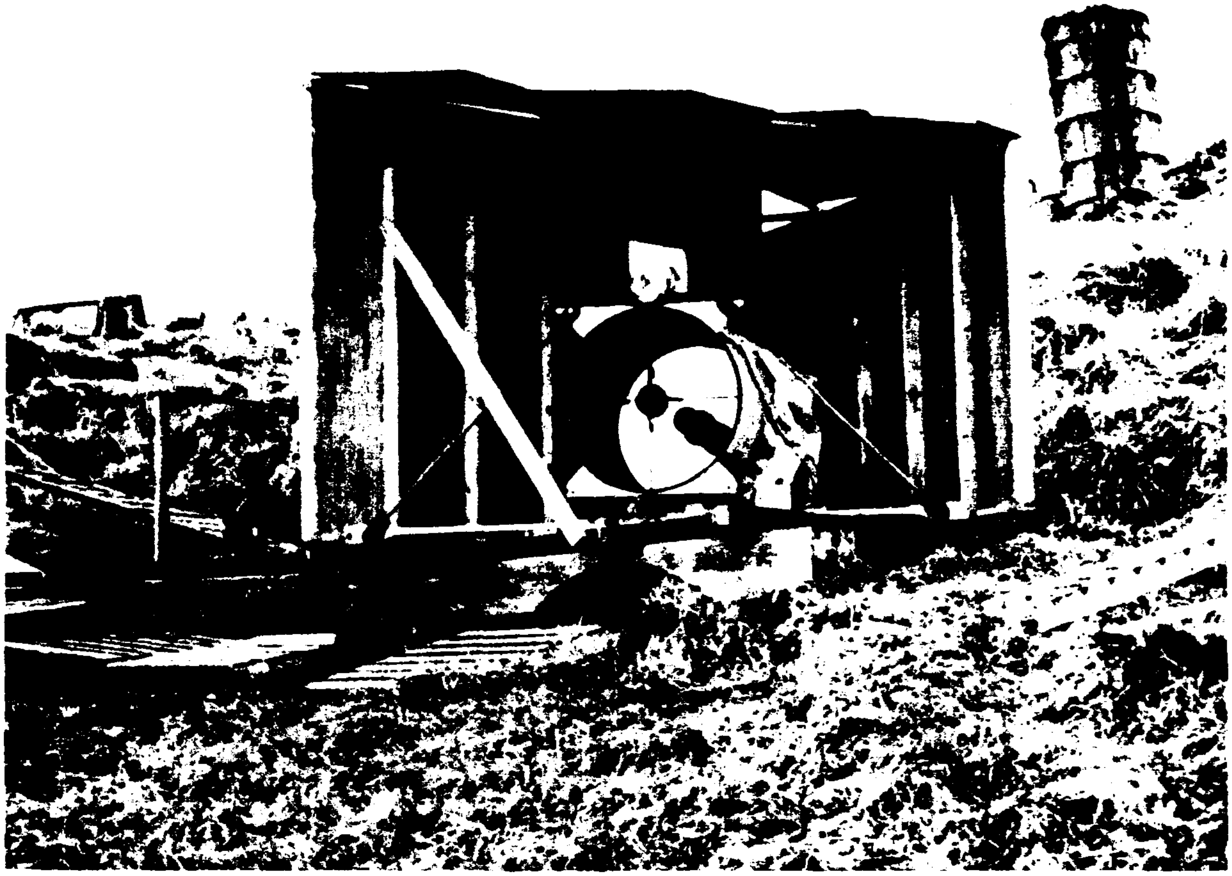


Figure 26. SORL 36-inch collimator.

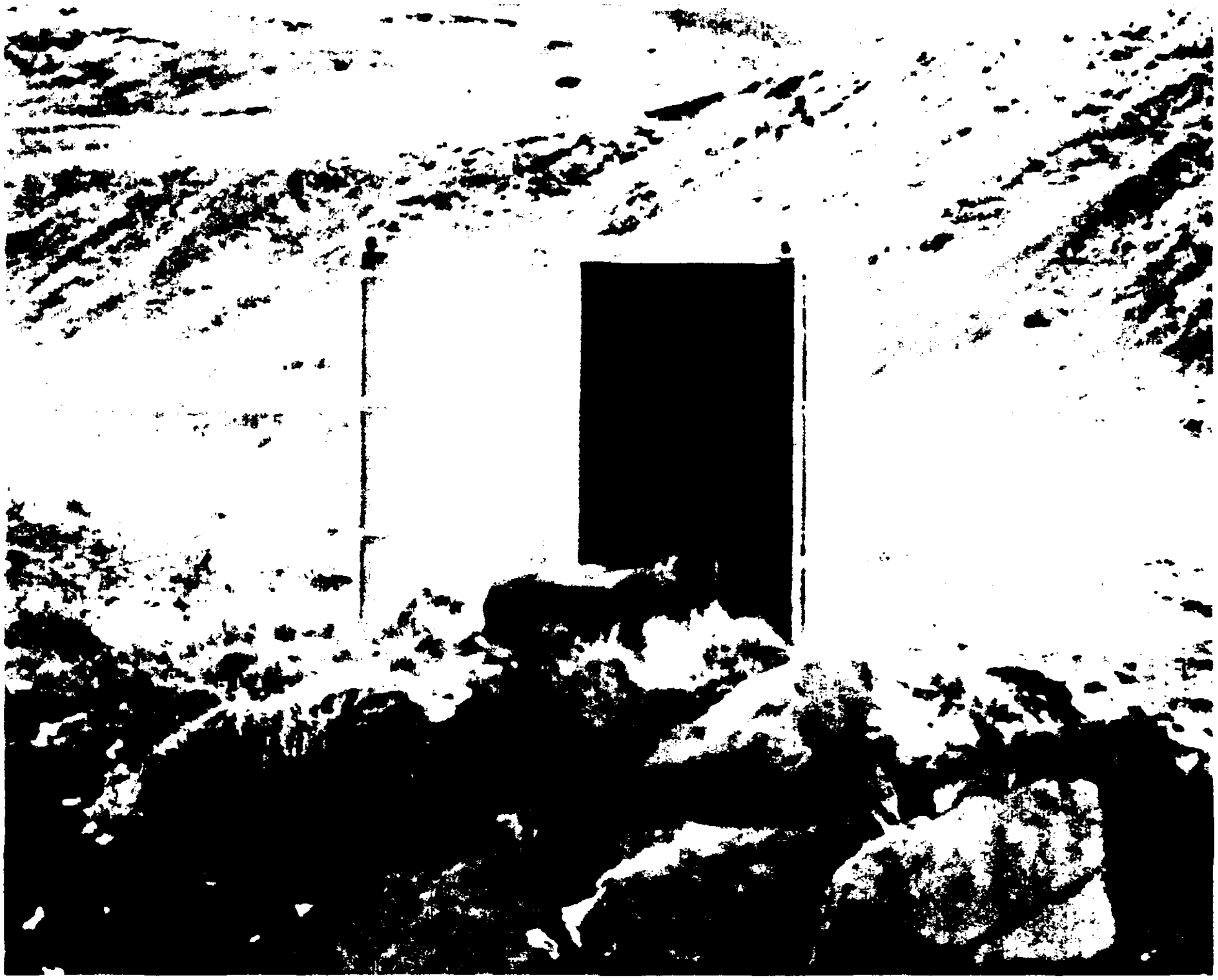
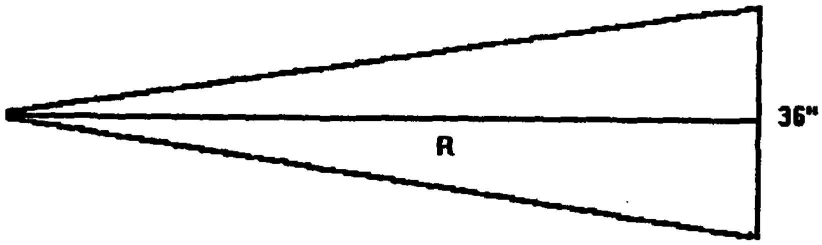


Figure 27. CI systems 5-inch collimator.

For the 36-inch diameter collimator:

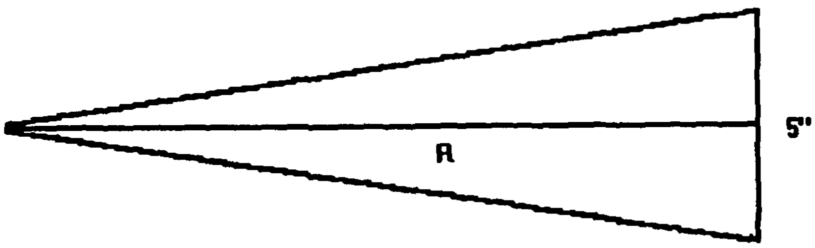


$$\theta = 2\ mrad\ (1/3\ of\ 6\ mrad\ FOV)$$

$$\tan\left(\frac{\theta}{2}\right) = \frac{18''}{R} \tag{18}$$

$$R = \frac{18''}{\tan\left(\frac{\theta}{2}\right)} = 1500' = 457 meters$$

For the 5-inch diameter collimator:



$$\tan\left(\frac{\theta}{2}\right) = \frac{2.5''}{1500'} = 0.000139$$

$$\frac{\theta}{2} = 0.007958 \tag{19}$$

$$\theta = 0.0159° = 0.278\ mrad$$

The measured system conversion factor at .45 km becomes

$$C_\lambda = \frac{S_{6mr,.45,36''}}{S_{6mr,.45,5''}} \tag{20}$$

For test operations, the ranges of the 36- and the 5-inch collimators were R_2 and R_1, respectively. The measured transmittance is the ratio of the signal response per steradian of the long path length over the signal response of the short path length as measured by the 36-inch collimator.

$$T = e^{-\sigma(R_2-R_1)} = \frac{Signal\ Response\ (at\ R_2)\ per\ steradian}{Signal\ Response\ (at\ R_1)\ per\ steradian} \tag{21}$$

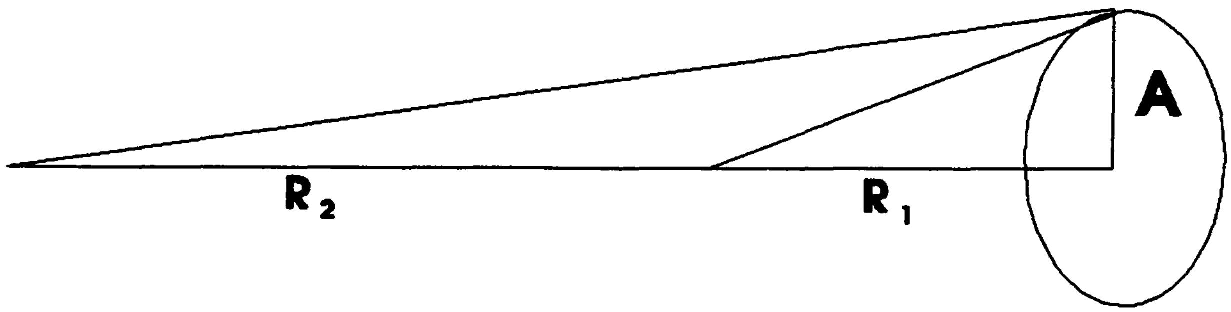
The signal response S of the 36-inch collimator at the short path length can be related to the signal response of the 5-inch collimator.

$$S_{6mr,R_1,36''} = S_{6mr,R_1,5''} \times C_\lambda \tag{22}$$

The response per steradian of the 36- and 5-inch collimators becomes

$$\frac{S_{6mr,R_2,36''}}{\Omega_2} \qquad \frac{S_{6mr,R_1,5''}}{\Omega_1} \tag{23}$$

The solid angles for the 36- and 5-inch collimators can be seen from the following figure:



where

R_1 = Short path length for 5-inch collimator
R_2 = Long path length for 36-inch collimator

To correct for the difference in path lengths, the solid angles need to be equal. From the definition of solid angle

$$\Omega = \int\int \frac{dS}{R^2(x,y)} = \int\int \frac{dx\ dy}{R^2(x,y)}$$

$$\Omega = \frac{Area}{R^2} \tag{24}$$

$$\Omega_2 = \frac{Area}{R_2^2} \quad \Omega_1 = \frac{Area}{R_1^2}$$

Substituting into the original transmittance

$$T = e^{-\sigma(R_2-R_1)} = \frac{S_{6mr,R_2,36''}}{S_{6mr,R_1,5''xC_\lambda}} \left(\frac{R_2}{R_1}\right)^2 \tag{25}$$

If $f(x_1, x_2, ..., x_n)$ is a function of $x_1, x_2, ..., x_n$ and the error in $x_i (i = 1, 2, ..., n)$ is Δx_i, then the error in f is given as Δf:

$$\Delta f \approx \frac{\partial f}{\partial x_1} \Delta x_1 + \frac{\partial f}{\partial x_2} \Delta x_2 + ... + \frac{\partial f}{\partial x_n} \Delta x_n \tag{26}$$

The fractional error of a function is given as

$$\frac{\Delta f}{f} \approx \frac{1}{f} \frac{\partial f}{\partial x_1} \Delta x_1 + \frac{1}{f} \frac{\partial f}{\partial x_2} \Delta x_2 + ... + \frac{1}{f} \frac{\partial f}{\partial x_n} \Delta x_n \tag{27}$$

Using the previous equation for the fractional error of the transmittance measured gives

$$\frac{\Delta T}{T} \approx \frac{\Delta S_{36}}{S_{36}} + \frac{\Delta S_5}{S_5} + \frac{2\Delta R_2}{R_2} + \frac{2\Delta R_1}{R_1} + \frac{\Delta C}{C} \tag{28}$$

Where ΔS_{36}, ΔS_5, ΔR_2, ΔR_1, and ΔC are the errors in the signal response (S_{36} and S_5), the range (R_2 and R_1) of the 36-inch and 5-inch collimators, and the calibration response (C), respectively.

2.5.3 Experiment 2

The second part of the APA Deployment is a side-by-side MRT experiment comparing the performance of the 3- to 5-micron Staring Focal Plane Array with the 8- to 14-micron Scanning Focal Plane Array as shown in figure 28. The Blackbody Target, figure 29, that is used for this experiment, is a crude model of an actual laboratory-grade Blackbody instrument. The water-filled, 4-by-8-foot tank (capacity of approximately 55 gallons) has heater elements uniformly mounted on its back surface and corresponding temperature probes mounted on its front surface. Two 4-Bar Targets are mounted six inches off the front surface of the water-filled tank. These targets represent ambient temperature and are monitored by additional temperature probes. The temperature probes are connected to Fluke's Temperature Logging System (TLS) that scans each probe and reports its temperature reading to the controlling personal computer via an RS-232 link. The heater elements mounted on the water-filled tank are connected to a relay box and can be individually controlled by the computer through its parallel port. The computer's role is to attain a desired delta T between the water-filled tank and 4-Bar targets by monitoring the temperature probes and heating the water-filled tank. A graphics full-color VGA display keeps the user informed of current delta T's: temperature gradients across the tank and

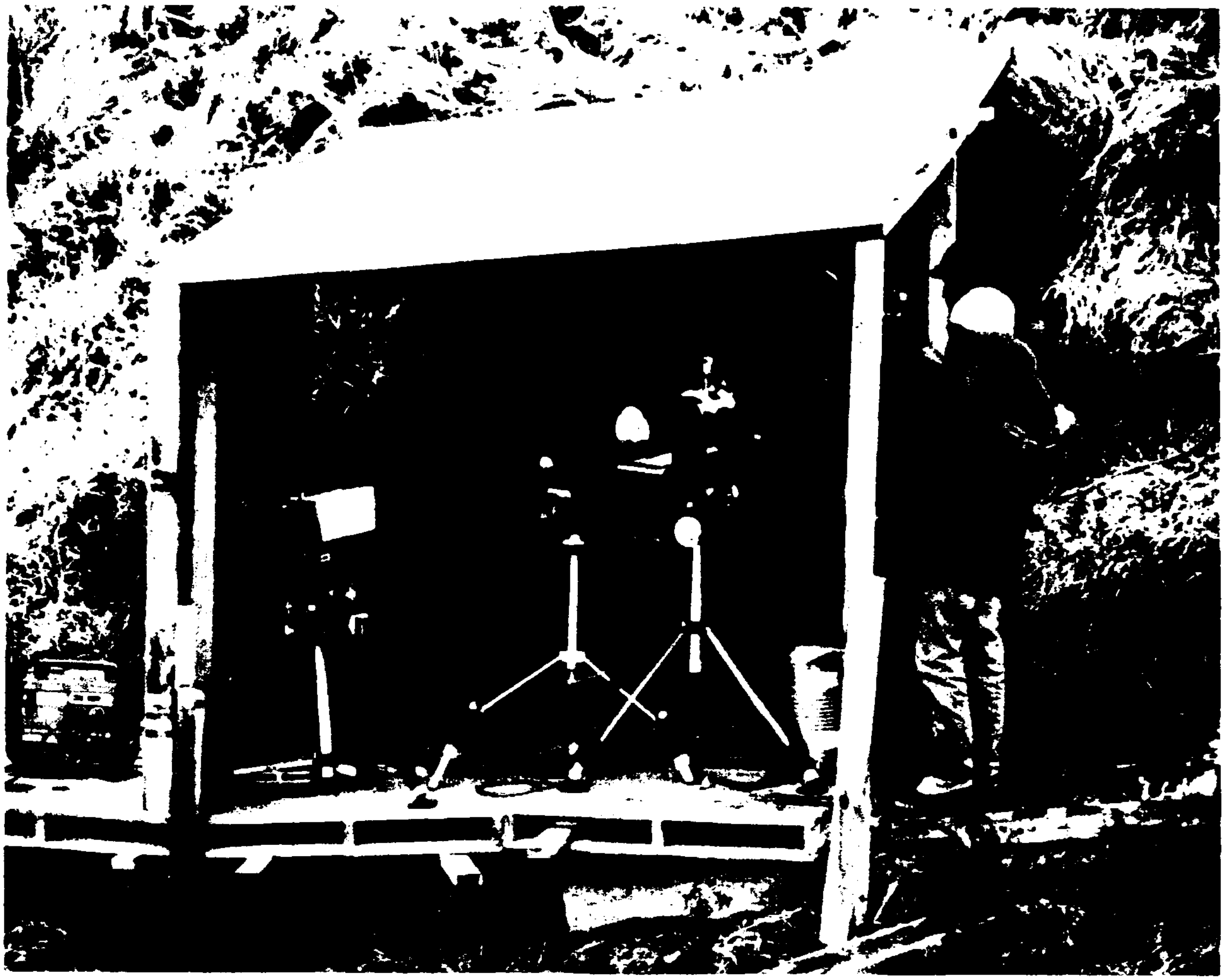


Figure 28. APA–Adak FLIR set-up.

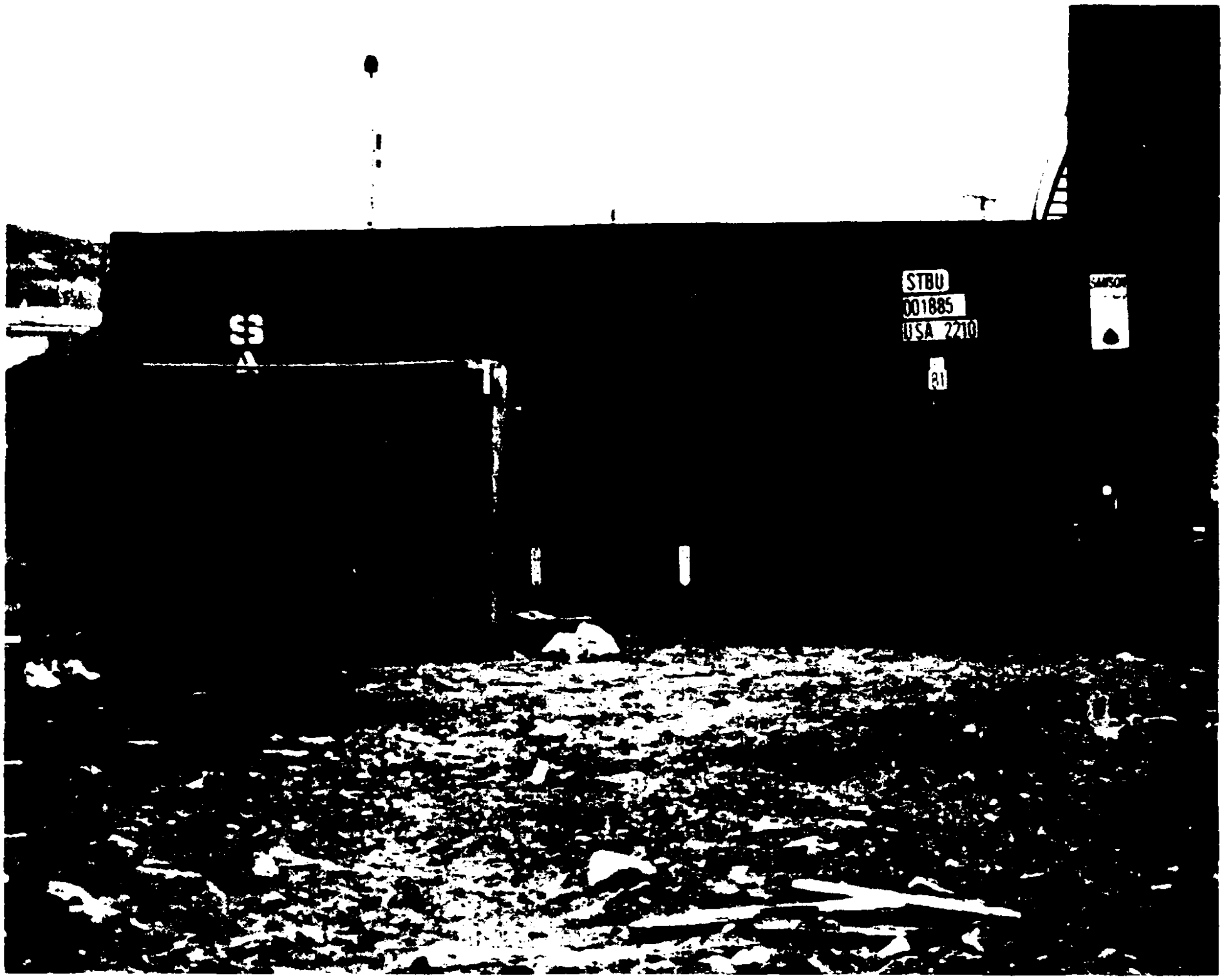


Figure 29. APA–Adak 4-bar blackbody tank.

targets, individual temperature probe values, and the current status of heater elements. In addition, this information is logged and time stamped to a file for post-test evaluation. Additional features include an electric water pump that is used to circulate water within the tank and reduce temperature gradients across its surface (see figure 30).

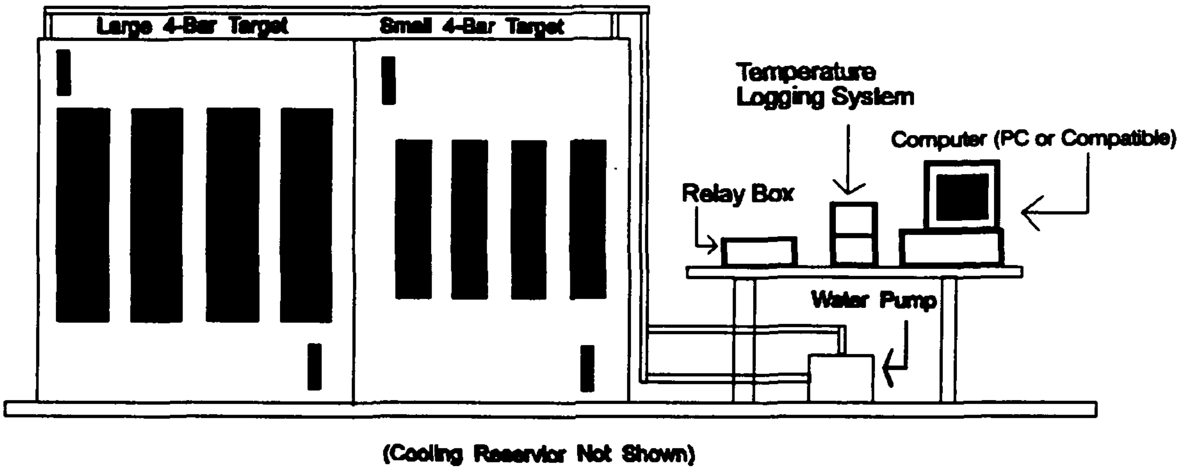


Figure 30. Blackbody tank system.

The Blackbody Tank System is comprised of a personal computer (IBM AT or compatible), the Fluke Temperature Logging System, 18 Omega temperature probes, a computer-controlled relay box, 12 heating elements, a water circulation system, the blackbody tank, two 4-Bar targets, and approximately 55 gallons of water. A breakdown of the specifications and elements of each component is listed in table 2.

Table 2. Blackbody tank system equipment.

Component	Elements	Description/Specifications
Computer System	Monitor	VGA/EGA required
	Base System	IBM AT or Compatible, 20-M hard drive
	Software	custom NCCOSC RDT&E written C Program
Fluke Temperature Logging System (TLS)	Temp Display	LED display of current temp probe reading
	Temp Scanner	Scans temp probes (adjustable scan speed)
	Printer	Prints scanned temperature probe readings, System is controllable via RS-232 connector
Omega Temperature Probes	Temp Probes	Temperature probes accurate to 0.2°C
	Extension Wire	Connects probes to TLS Scanner
NCCOSC RDT&E Built Computer Controlled Relay Box	6 Relays	VDC controlled relays (check specs)
	Control Circuitry	Input controlled Transistor Switch
	6 VAC Output Lines	VAC output lines to toggle heaters on/off
Heating Elements	Heaters (12)	VAC controllable circular heating elements
	VAC Power Cords	Connect relay box to heating elements
Water Circulation	Electric Pump	110 VAC electric pump
	Cooling Reservoir	15- to 20-gallon inline tank for fast cooling
	Water Jets	Two 3.5-inch copper tubing with holes to improve water circulation.
	Hoses & Clamps	Interconnect cooling system

Table 2. Blackbody tank system equipment (Continued).

Component	Elements	Description/Specifications
Blackbody Tank	Flat, Steel Tank	55 gal, 4 ft. x 8 ft. x .25 ft., Black (ϵ = 0.99)
4-Bar Targets	2 Steel Targets	4 ft.x4 ft. targets, mounted side-by-side 4-inches off tank front surface, represent different spatial frequencies

2.5.4 Experiment 3

Experiment 3 is the continuous collection of weather data. This data was collected by two stationary weather stations as shown in figure 31. During the tests, continuous collection of data was logged every five minutes. The weather stations are a commercial product from Omnidata International, Inc. The stations collected the following key atmospheric parameters: pressure in millibars (mb), temperature (°C), relative humidity (%), wind speed in knots, and wind direction in degrees magnetic (deg mag). It is important to measure atmospheric parameters that are occurring at the time of the transmittance measurements. This data will also be compared to the SSMO data used to select the APA Test Site. Radiosonde data from the test sites was made available from NOCD. The data are collected over the ocean path at different altitudes to form altitude profiles that are an important input to the LOWTRAN model.

The weather stations are comprised of a Visala temperature and a relative humidity sensor in a solar radiation shield, 6-feet above ground level (agl). The wind speed and direction are monitored by an Omnidata (Model ES-020) wind speed and direction sensor at 12-feet agl. Barometric pressure is monitored by a Qualimetrics, Inc., (Model 7105-A) analog output barometer at 3-feet agl. All data are logged on an EPROM in ASCII format by a battery- powered Omnidata Easy Ledger Recording System. The specifications of the elements are summarized in table 3.

Table 3. Weather station parameters measured

Elements	Range	Units	Error
Temperature	-50 to 80	°C	± 1% (approx. 0.25°C)
Relative Humidity	0 to 100	%	± 2%
Wind Speed	1.3 to 112	knots	0.7%
Wind Direction	0 to 355	deg mag	± 5 deg mag
Barometric Pressure	600 to 1100	mb	± 0.08%

Figure 31. APA weather station.

3.0 APA EXPERIMENT DATA

3.1 CONVERSION FACTOR, C FUNCTION, DATA AND ERRORS

From the error analysis in section 2.3.1, the percent error (Δ) of the transmittance measurements was:

$$\frac{\Delta T}{T} \approx \frac{\Delta S_{36}}{S_{36}} + \frac{\Delta S_5}{S_5} + \frac{2\Delta R_2}{R_2} + \frac{2\Delta R_1}{R_1} + \frac{\Delta C}{C} \tag{29}$$

The fractional errors of the signal response of the 36-inch and the 5-inch collimators were monitored and kept below 1%. The fractional errors in the two ranges were both below 0.1%. Figures 32 through 35 show plots of the C function and the percent error for both Adak and Pensacola. The fractional error of the C function for Adak was 1% for the 3- to 5-micron region and between 3% to 5% for the 8- to 12-micron region. The fractional error of the C function for Pensacola was between 1% to 4% for the 3- to 5-micron region and between 1% to 5% in the 8- to 12-micron region. The C function was the main contributor to the errors for both sites.

3.2 EXPERIMENT 1 DATA

Figures 36 through 41 show the transmittance curves as measured in the Adak deployment from 20 to 27 February 1992. Figures 36, 37 and 41 transmittance measurements were taken on clear days. Figures 38 and 40 show measurements taken during light snow storms. Figure 39 shows the most dramatic transmittance change during a light-to-heavy snow fall.

Figures 42 through 45 show the transmittance curves as measured in the Pensacola deployment from 20 to 28 September 1992. Figure 42, 43 and 44 show transmittance as measured with 80%, 77.5% and 66% relative humidity, respectively. Figure 45 shows the transmittance curves from all the days. The relative humidity for 26, 27 and 28 September was 90%, 88% and 66%, respectively.

3.3 EXPERIMENT 2 DATA

Videotapes and recorded values for the MRT measurements document the results of this experiment. The videotapes are available separately from this report. Figures 46 and 47 show the results of the Adak and Pensacola deployments. In the Adak deployment, both the Mitsubishi and Kodak 3- to 5-micron Staring Focal Plane Array cameras were compared to the Rank Pullin (RPC) 8- to 14-micron Scanning SPRITE FLIR system. For the Pensacola deployment, the Mitsubishi camera and the GEC Avionics Scanning SPRITE FLIR system were compared.

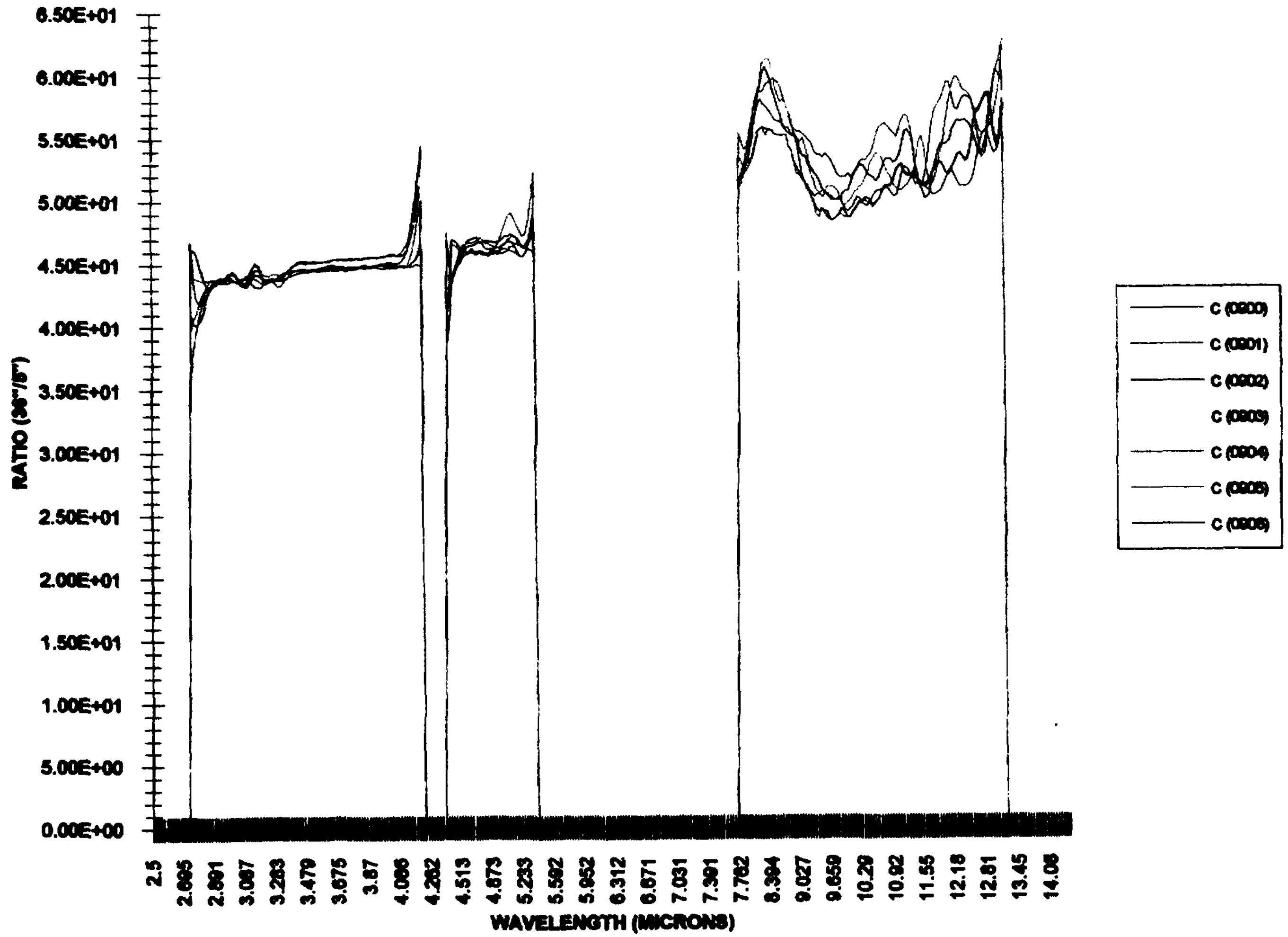


Figure 32. C function: Adak, AK on 2/26/92 (clear, OPL = 1160 m).

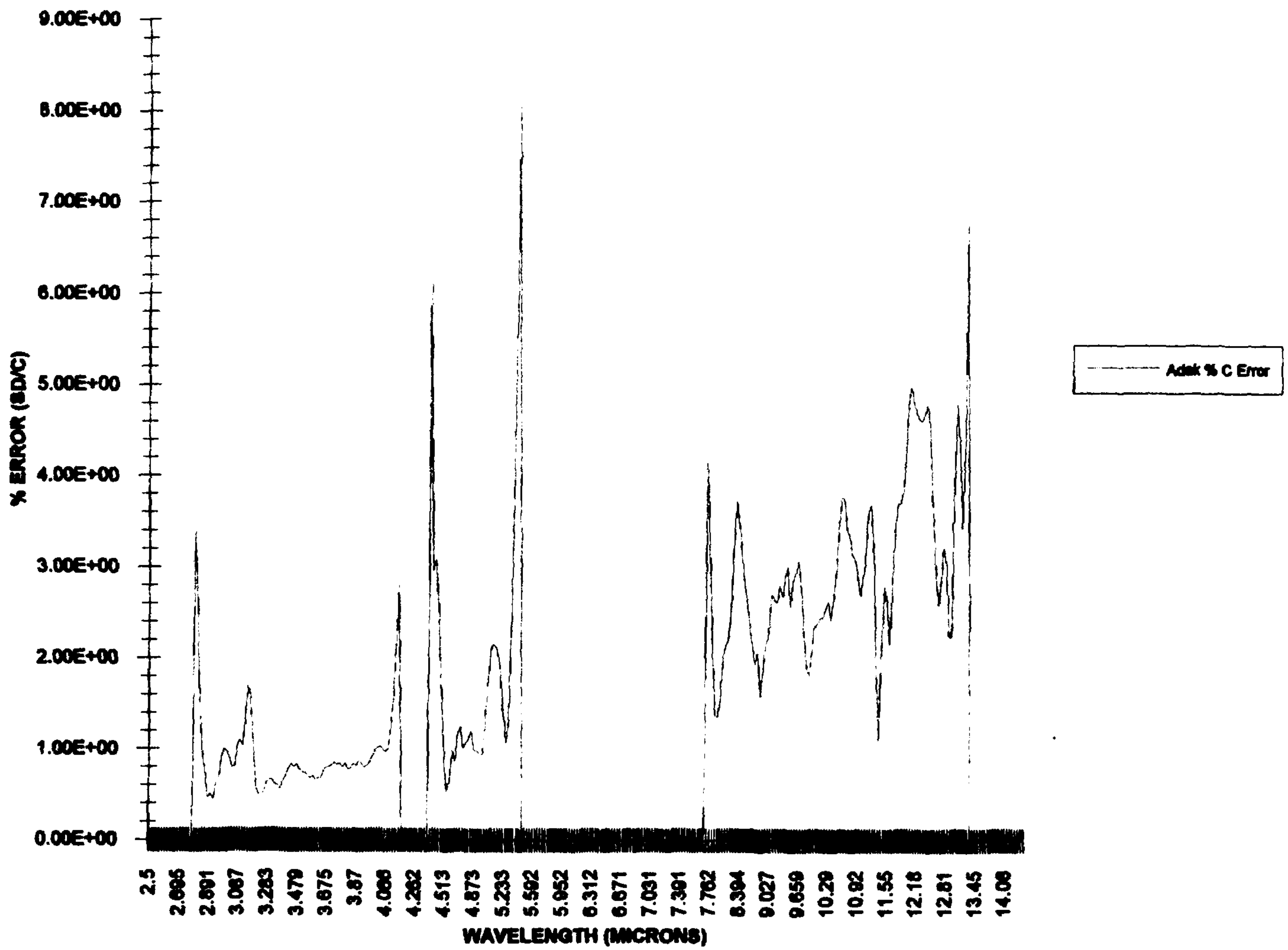


Figure 33. C function percent error: Adak, AK on 2/26/92.

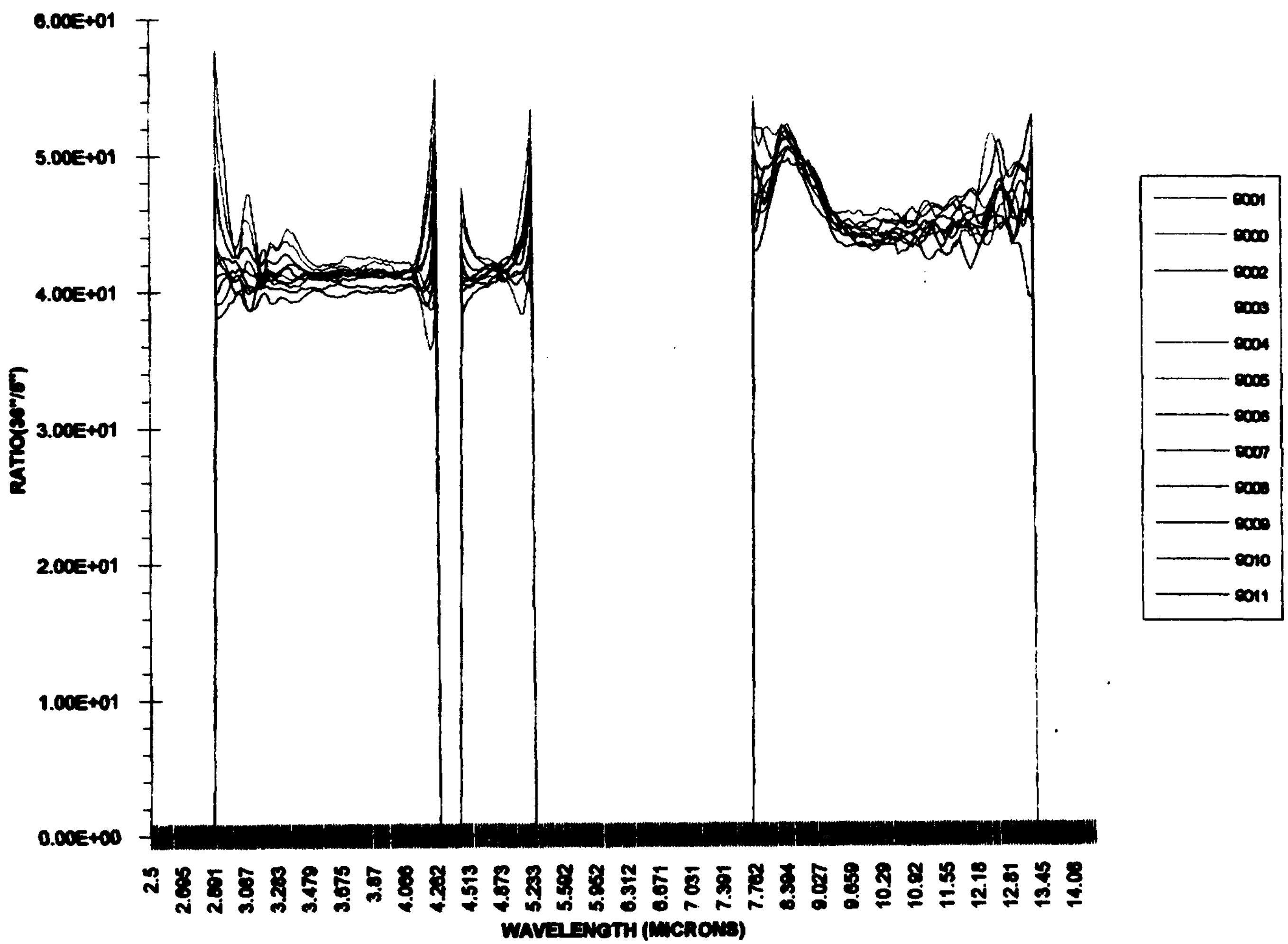


Figure 34. C function: Pensacola, FL on 9/20/92 (clear, OPL = 825 m).

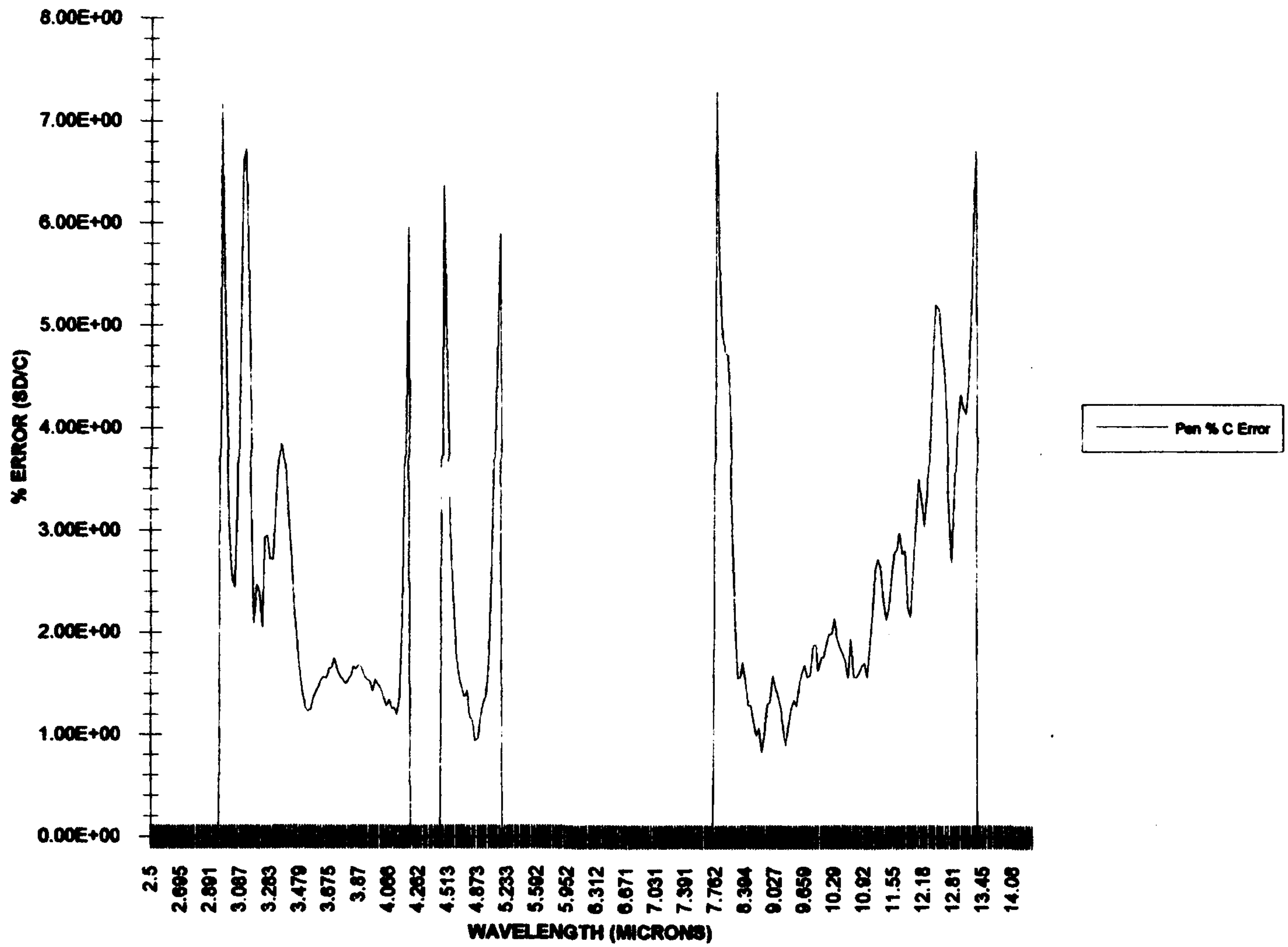


Figure 35. C function percent error: Pensacola, FL on 9/20/92.

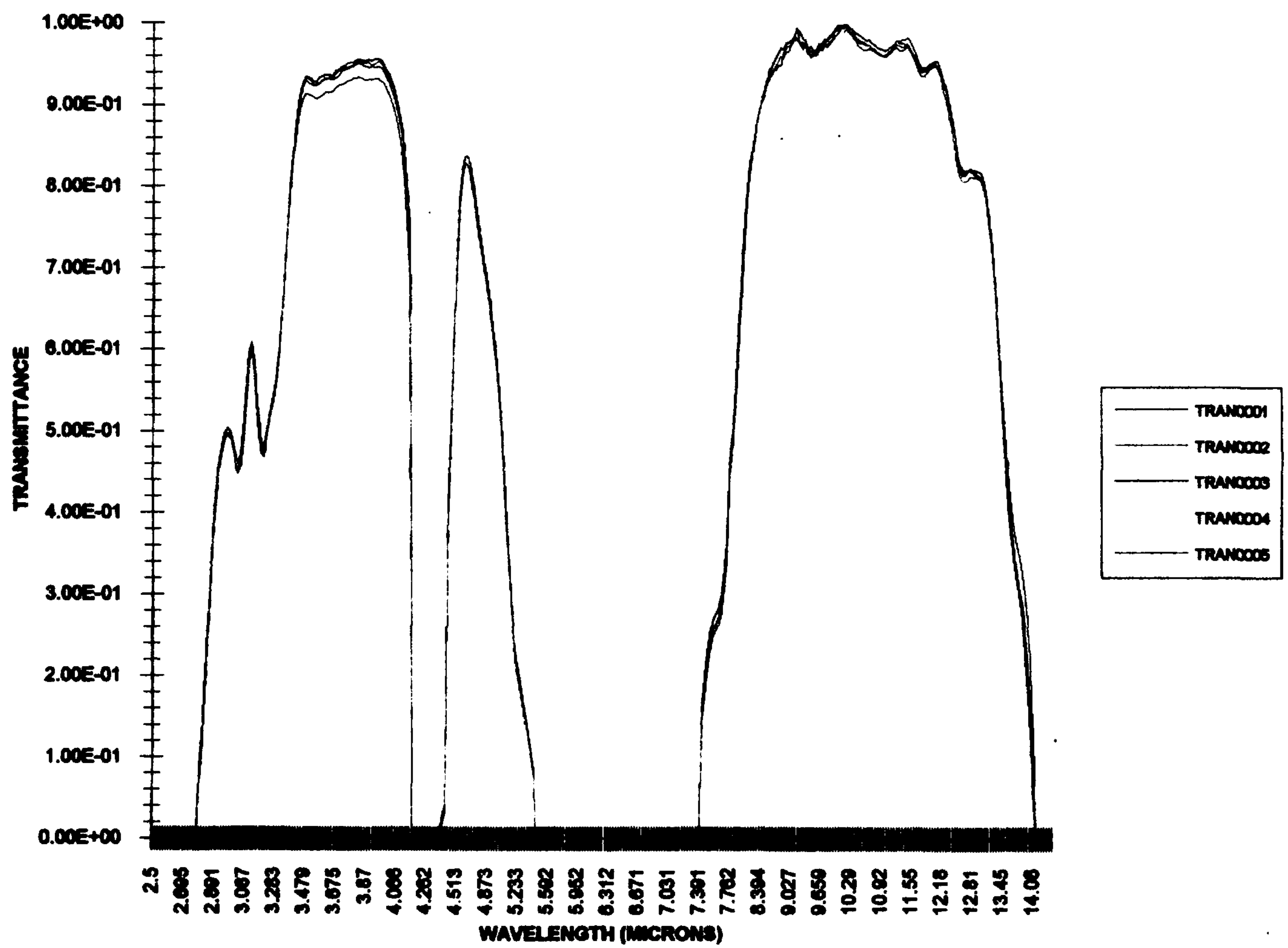


Figure 36. Transmittance: Adak, AK on 2/20/92 (clear, OPL = 1160 m).

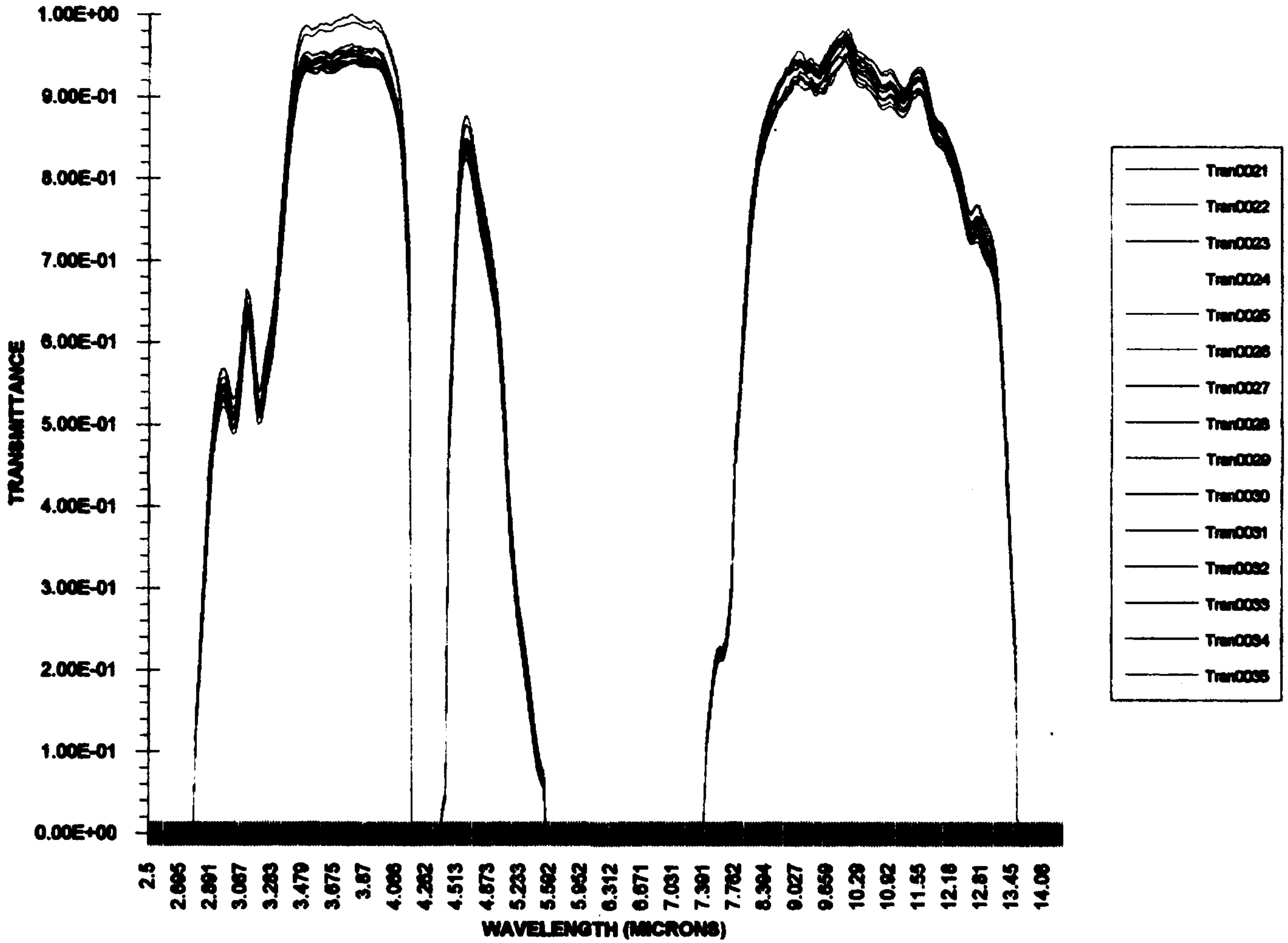


Figure 37. Transmittance: Adak, AK on 2/22/92 (clear, OPL = 1160 m).

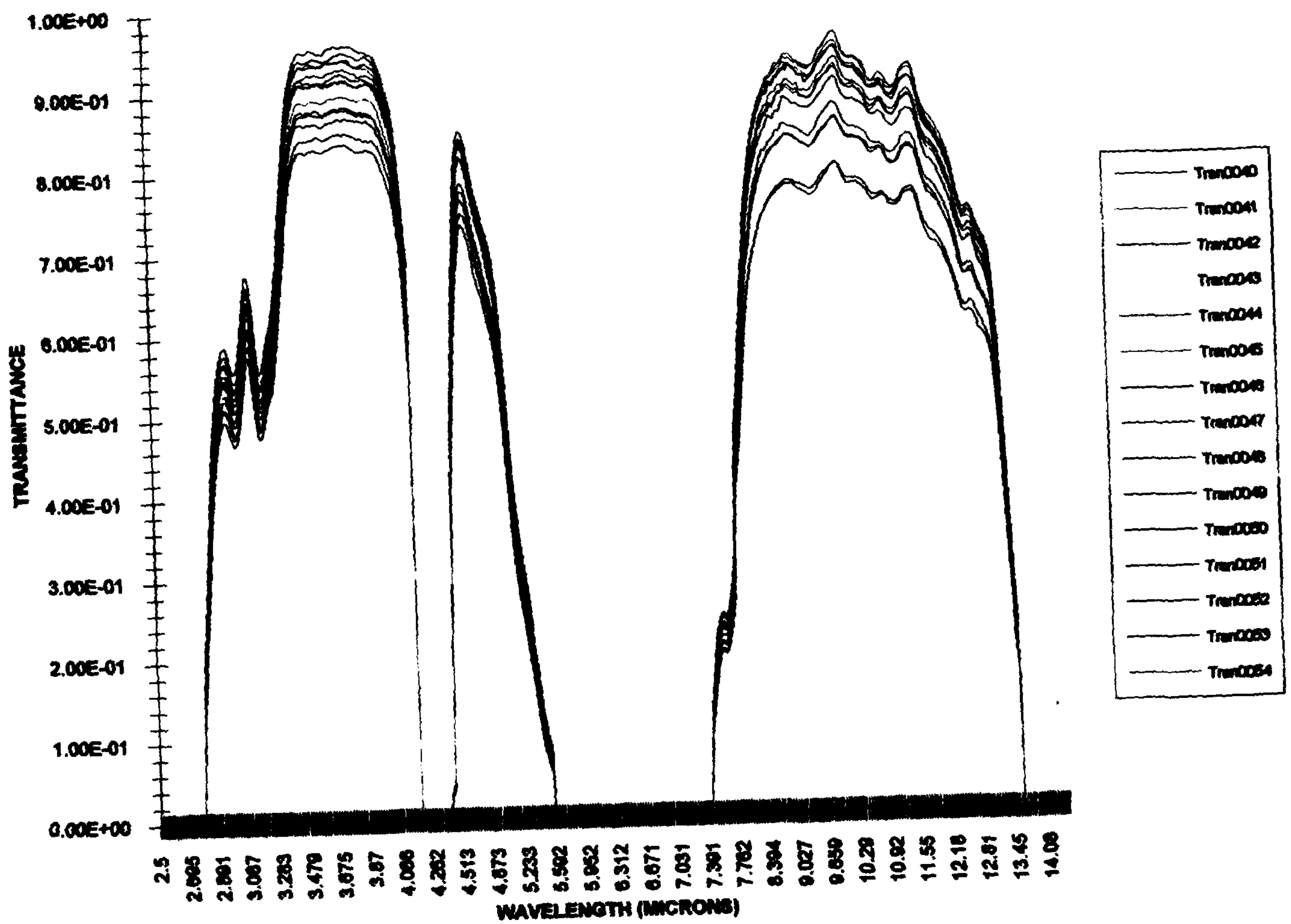


Figure 38. Transmittance: Adak, AK on 2/23/92 (light snow, OPL = 1160 m).

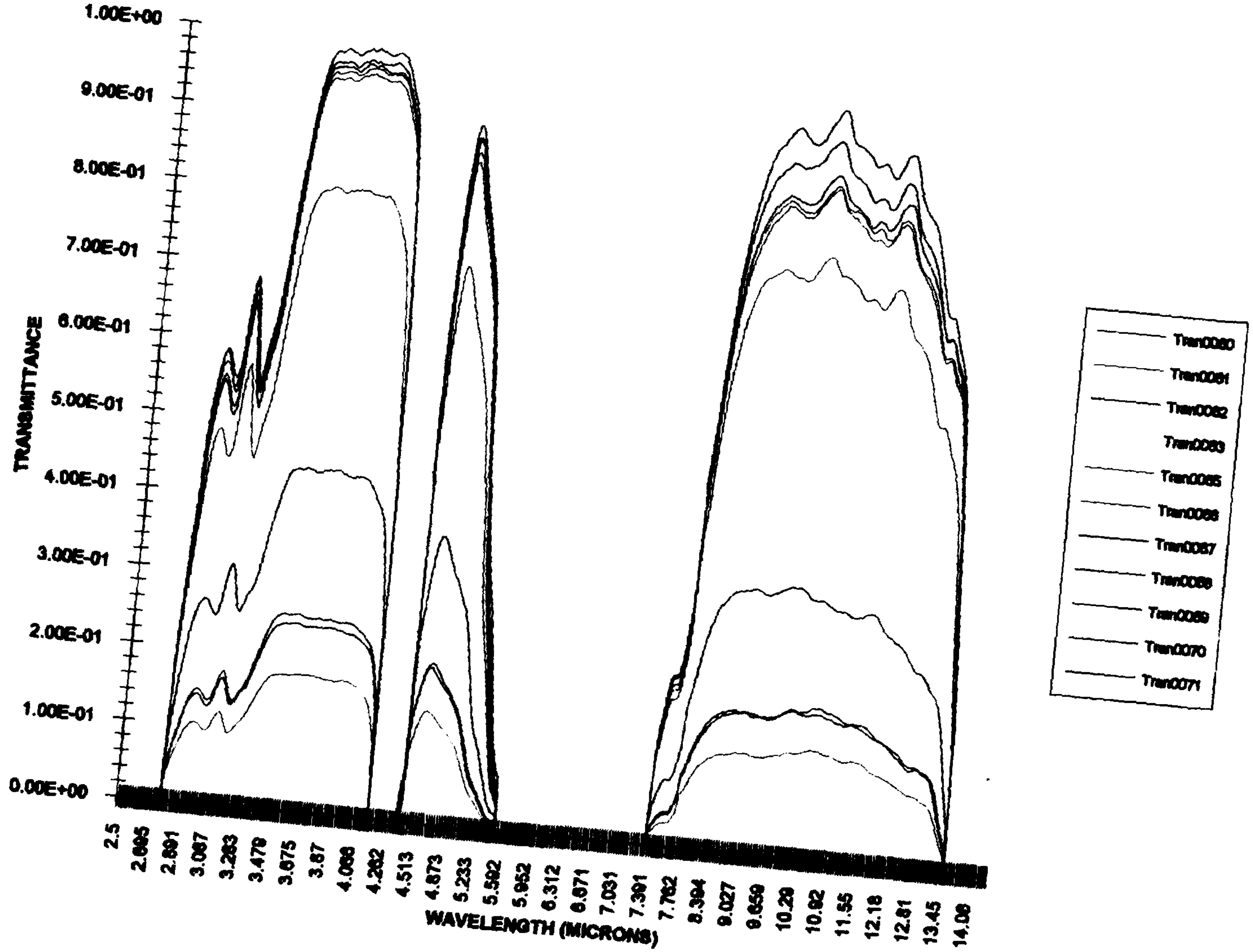


Figure 39. Transmittance: Adak, AK on 2/24/92 (heavy snow, OPL = 1160 m).

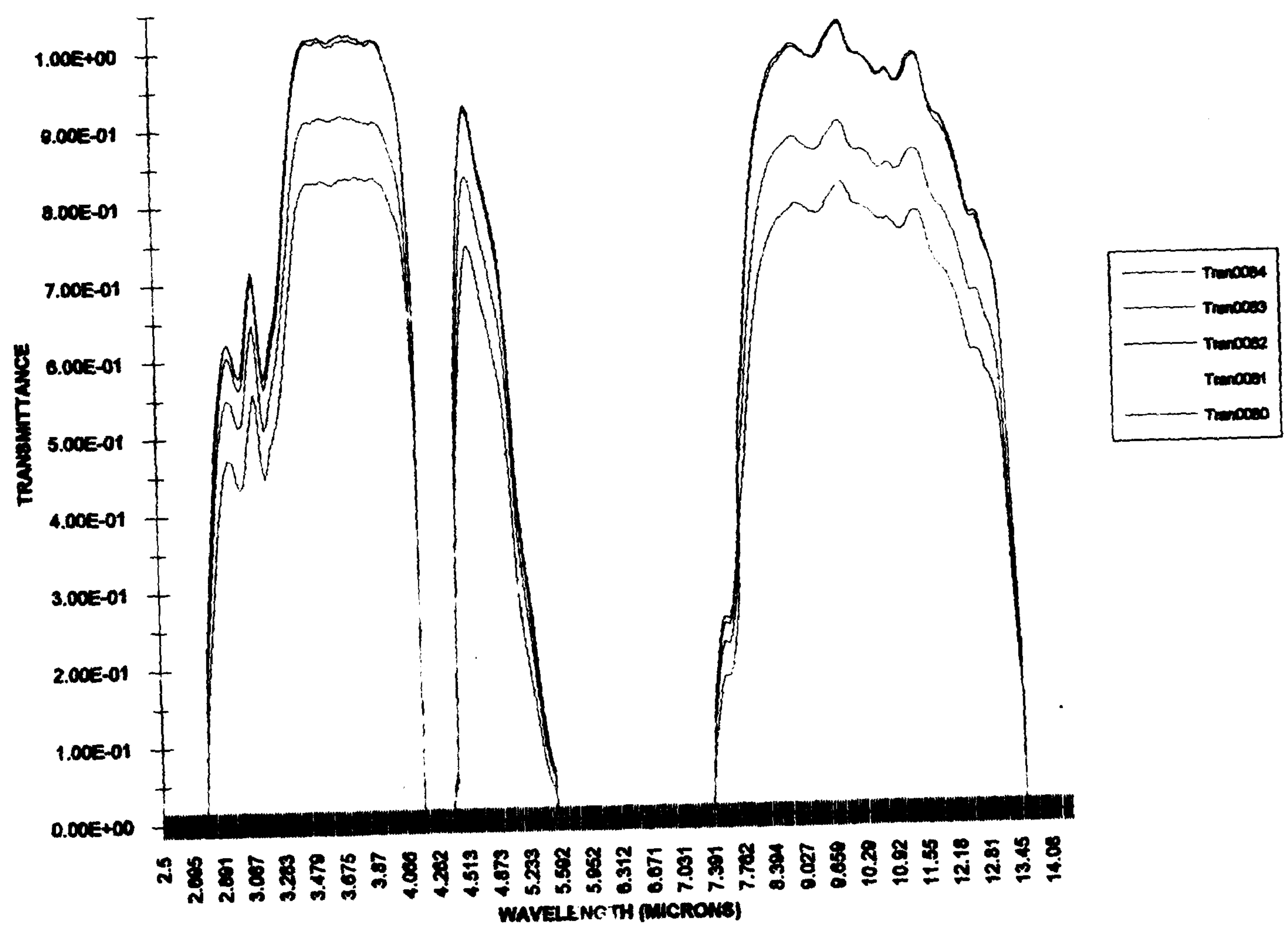


Figure 40. Transmittance: Adak, AK on 2/25/92 (light snow, OPL = 1160 m).

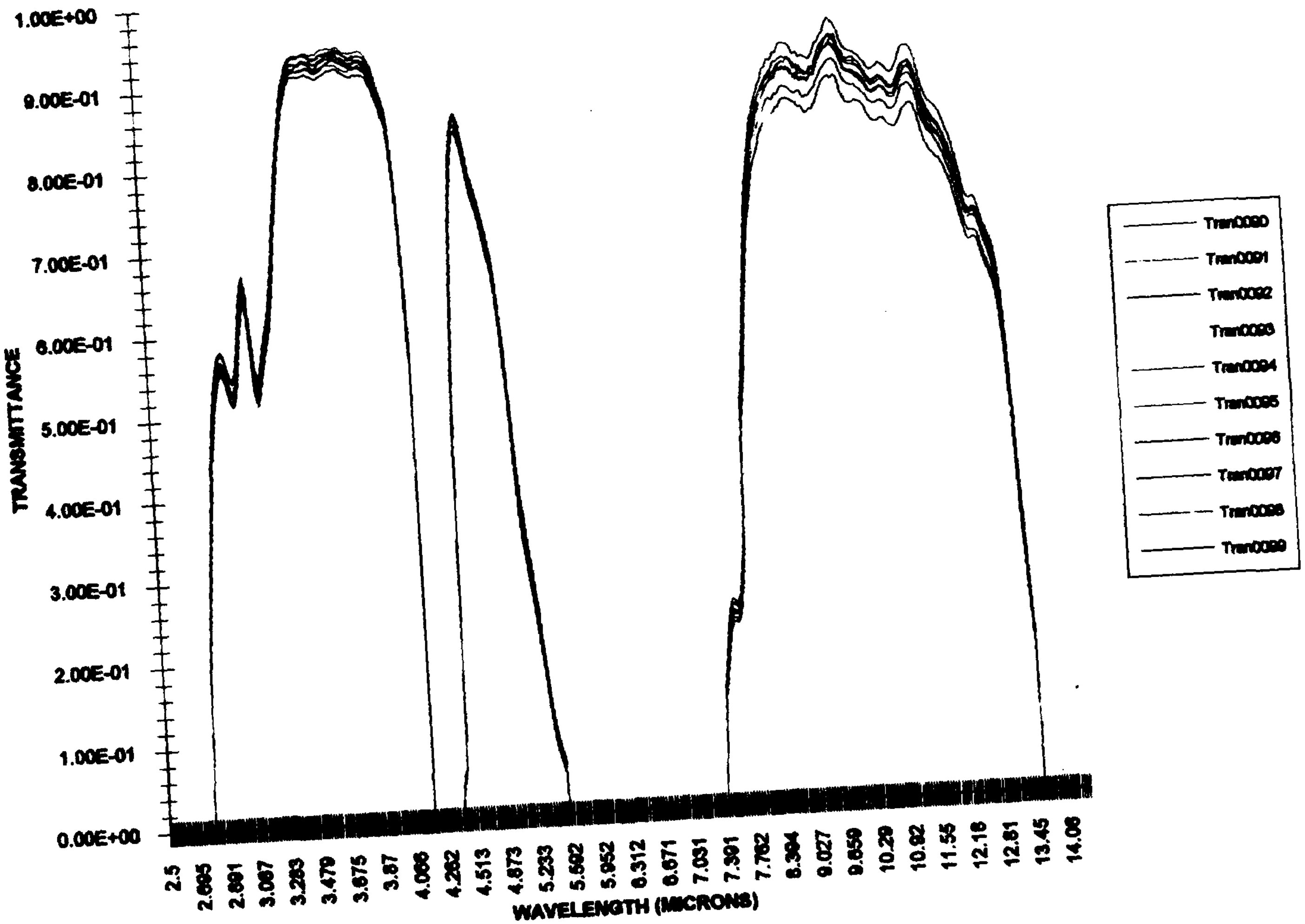


Figure 41. Transmittance: Adak, AK on 2/27/92 (clear, OPL = 1160 m).

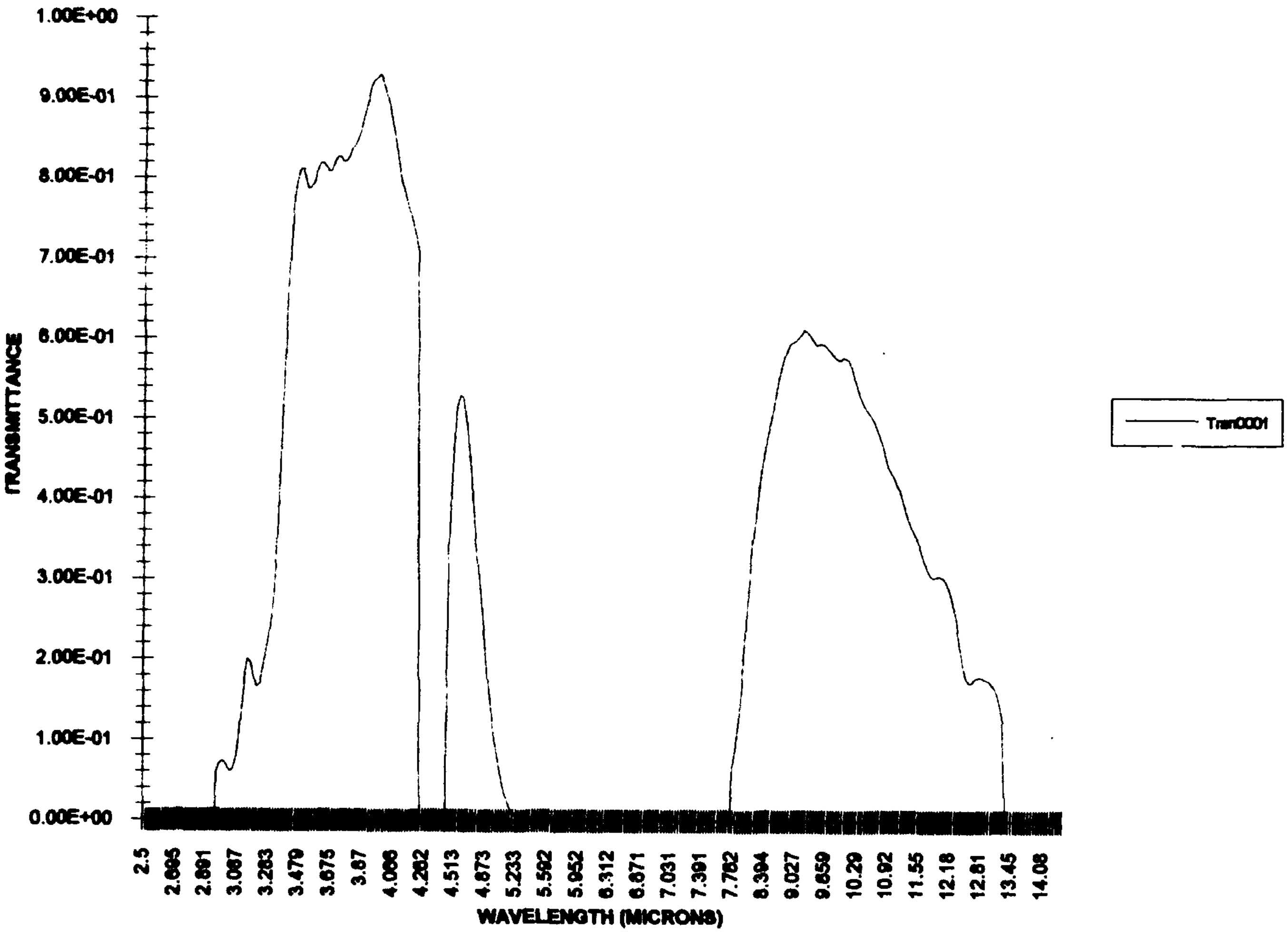


Figure 42. Transmittance: Pensacola, FL on 9/21/92 (PW = 21.8 mm/km, OPL = 1685 m).

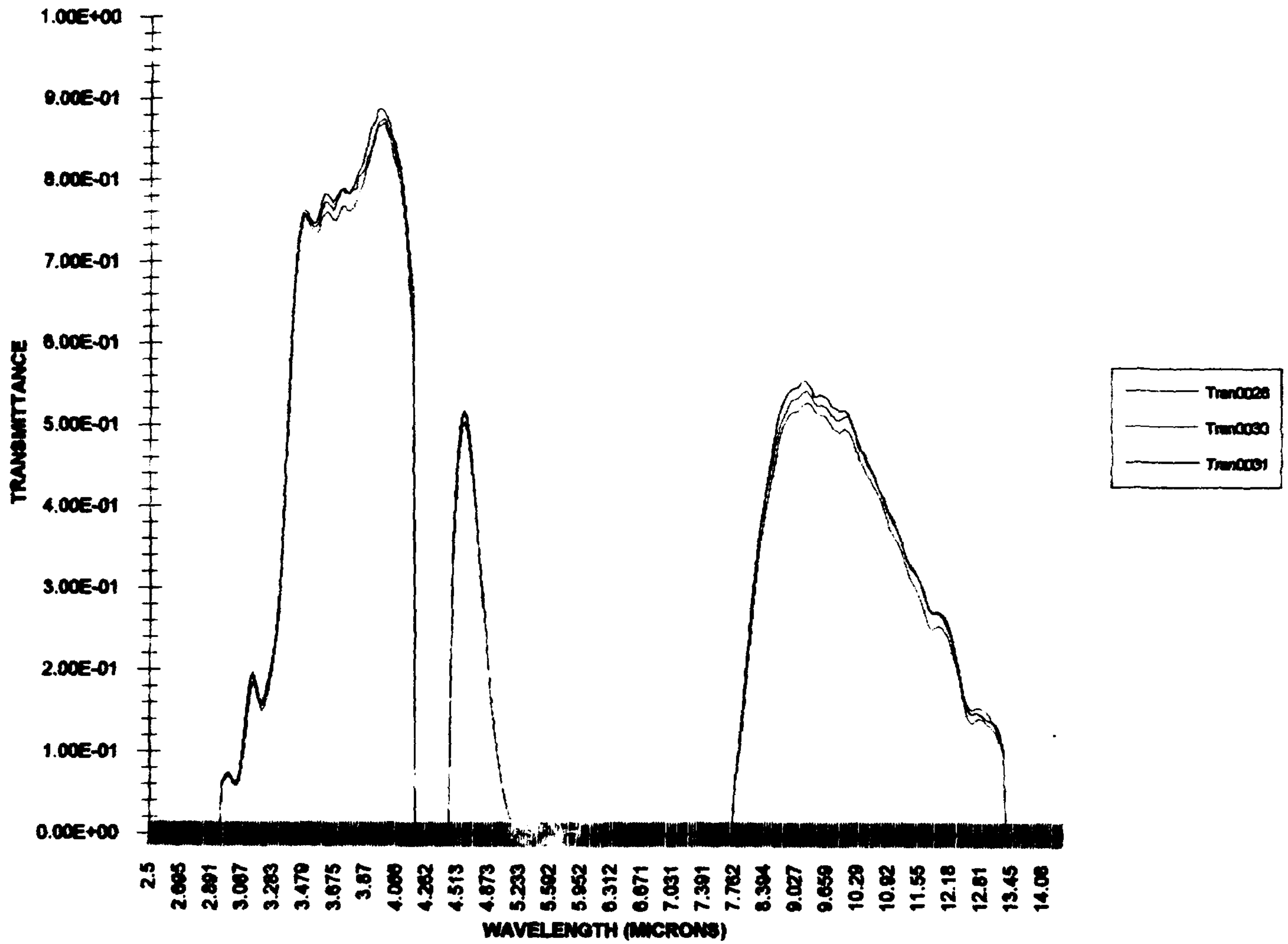


Figure 43. Transmittance: Pensacola, FL on 9/22/92 (PW = 23.3 mm/km, OPL = 1685 m).

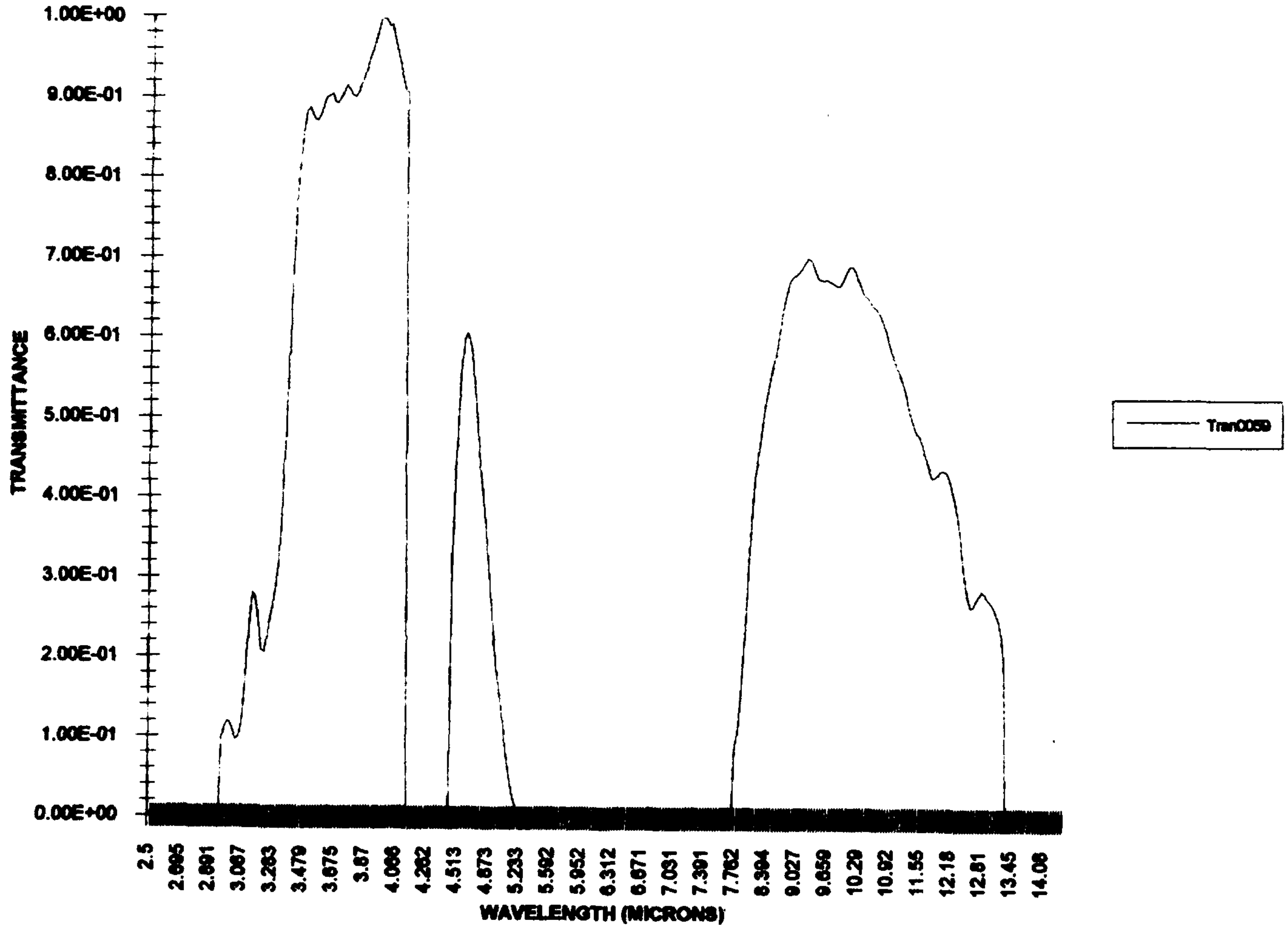


Figure 44. Transmittance: Pensacola, FL on 9/23/92 (PW = 18.4 mm/km, OPL = 1685 m).

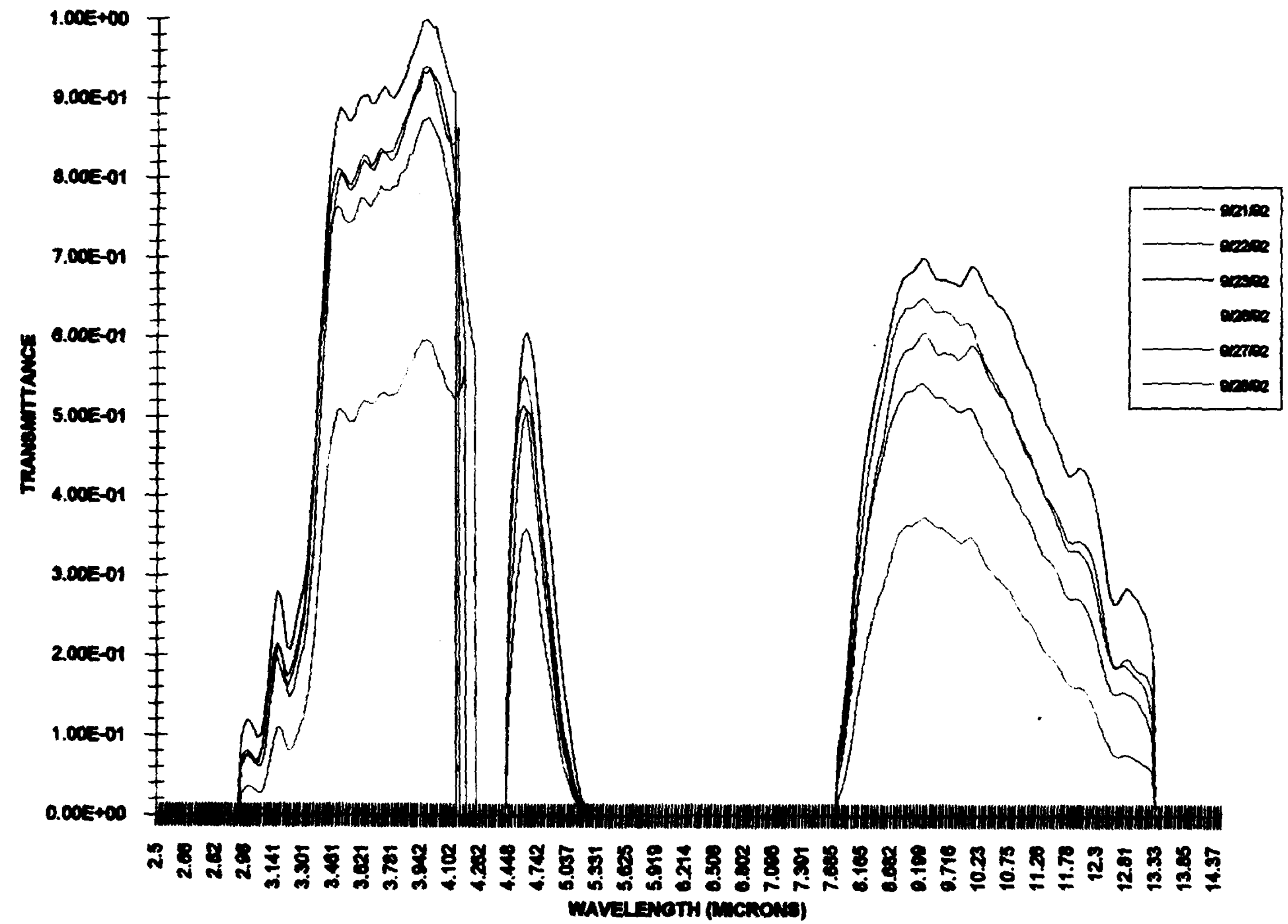


Figure 45. Transmittance: Pensacola, FL on 9/21/92 to 9/28/92.

			Delta T	Temp Deg Fahrenheit		Delta T	Temp Deg Fahrenheit	
Date	System	Time	Large 4-Bar	Tank Grad	Targ Grad	Small 4-Bar	Tank Grad	Targ Grad
Feb 23 92	Mitsubishi	11:04	0.79	0.71	0.47			
Feb 23 92	Kodak	11:12				0.57	0.49	0.24
Feb 23 92	Mitsubishi	11:15				0.59	0.48	0.27
Feb 23 92	RPC	11:24	1.23	0.67	0.51			
Feb 23 92	Kodak	13:33				0.93	0.42	0.48
Feb 23 92	Mitsubishi	13:38				1.23	0.33	0.44
Feb 25 92	RPC	7:13	1.34	0.22	0.16			
Feb 25 92	RPC	7:31	1.40	0.18	0.15			
Feb 25 92	RPC	7:58	1.38	0.27	0.17			
Feb 25 92	Mitsubishi	9:14				1.13	0.14	0.12
Feb 25 92	Mitsubishi	9:21	0.88	0.14	0.13			
Feb 25 92	Mitsubishi	9:49	0.49	0.27	0.30			
Feb 25 92	Mitsubishi	10:19				0.95	0.52	0.37
Feb 25 92	Kodak	17:15				0.75	0.06	0.16
Feb 25 92	Kodak	17:20				0.67	0.10	0.19
Feb 25 92	RPC	17:29	1.47	0.50	0.30			
Feb 25 92	Mitsubishi	17:30				0.95	0.10	0.33
Feb 25 92	RPC	17:50				2.17	0.03	0.30
Feb 26 92	Kodak	9:16				0.62	0.07	0.16
Feb 26 92	Kodak	10:02	0.44	0.25	0.18			
Feb 26 92	Kodak	10:16	0.45	0.32	0.20			
Feb 26 92	Mitsubishi	10:32	0.95	0.47	0.25			
Feb 26 92	Kodak	10:39				0.66	0.15	0.31
Feb 26 92	RPC	10:55	1.43	0.70	0.32			
Feb 26 92	Mitsubishi	11:00				1.05	0.46	0.26
Feb 27 92	Mitsubishi	9:19				0.76	0.32	0.13
Feb 27 92	Mitsubishi	9:20	Note: wind/snow flurry			0.81	0.23	0.12
Feb 27 92	Kodak	9:24				0.87	0.12	0.13
Feb 27 92	RPC	9:37	1.36	0.17	0.21			
Feb 27 92	Kodak	9:54				0.80	0.09	0.14
Feb 27 92	Mitsubishi	9:58				0.78	0.17	0.14
Feb 27 92	Kodak	10:14	0.45	0.42	0.20			
Feb 27 92	Mitsubishi	10:14	0.45	0.42	0.20			
Feb 27 92	Kodak	10:28	0.42	0.45	0.22			
Feb 27 92	Mitsubishi	10:28	0.42	0.45	0.22			
Feb 27 92	Kodak	10:32	0.39	0.46	0.22			
Feb 27 92	Mitsubishi	10:33	0.40	0.47	0.25			
Feb 27 92	Mitsubishi	10:47				0.55	0.40	0.27

Large 4-Bar Target fx1 = 2.537 cycles/mrad
Small 4-Bar Target fx2 = 4.228 cycles/mrad

Distance from FLIR Pad to 4-Bar Tank = 665 meters

Figure 46. Adak MRT measurements (23–27 February 1992).

			MRT (Temp Deg Fahrenheit)				
Date	System	Time	Large 4-Bar	Tank Grad	Targ Grad	Data File	Weather Conditions/Notes
Sept 22 92	*******	10:00-14:00	------	------	------	------	Note: Gradient Problems with Target
Sept 22 92	*******		------	------	------	------	To Sun Loading. Solution:Night Runs
Sept 23 92	*******	20:00-21:00	------	------	------	------	Note: Tank Hotter Than Target.
Sept 23 92	*******		------	------	------	------	Solution: Add Cooling Reservoir To Tank
Sept 23 92	Mitsubishi	13:38	1.23	0.33	0.44		
Sept 24 92	Mitsubishi	19:57	0.25	0.45	0.08	pen24_1	WX: Cloudy, High Winds, 3' Seas
Sept 24 92	GEC 20X	19:58	0.3	0.47	0.08		Temp:21.3°C RH:82.8%
Sept 24 92	GEC 14X	20:01	0.5	0.48	0.08		
Sept 24 92	GEC 14X	20:32	0.51	0.34	0.1	pen24_2	Temp:20.9°C RH:83.4%
Sept 24 92	Mitsubishi	20:34	0.37	0.35	0.1		
Sept 24 92	Mitsubishi	20:44	0.19	0.42	0.1		
Sept 24 92	GEC 14X	20:47	0.4	0.41	0.08		
Sept 24 92	GEC 14X	21:13	0.51	0.39	0.12	pen24_3	Temp:20.5°C RH:83.7%
Sept 24 92	Mitsubishi	21:15	0.41	0.37	0.12		
Sept 24 92	Mitsubishi	21:19	0.18	0.45	0.05		
Sept 24 92	GEC 20X	21:20	0.26	0.44	0.06		
Sept 24 92	GEC 14X	21:22	0.39	0.45	0.06		
Sept 25 92	GEC 14X	17:07	0.59	0.23	0.05	pen25_1	WX: Cloudy, Winds 10-12 Knots NE-E
Sept 25 92	Mitsubishi	17:11	0.52	0.24	0.02		Temp:23.6°C RH:78.0%
Sept 25 92	Mitsubishi	17:28	0.26	0.29	0.06	pen25_2	Temp:23.6°C RH:78.5%
Sept 25 92	GEC 14X	17:31	0.48	0.37	0.05		
Sept 25 92	GEC 14x	18:13	0.57	0.28	0.04	pen25_3	Temp:23.5°C RH:79.6%
Sept 25 92	Mitsubishi	18:14	0.49	0.35	0.05		
Sept 25 92	Mitsubishi	18:29	0.26	0.38	0.08	pen25_4	Temp:23.6°C RH:78.6%
Sept 25 92	GEC 20x	18:30	0.32	0.36	0.06		
Sept 25 92	GEC 14X	18:31	0.37	0.35	0.06		
Sept 25 92	GEC 14X	19:26	0.39	0.26	0.14	pen25_5	Temp:23.6°C RH:78.4%
Sept 25 92	Mitsubishi	19:27	0.87	0.12	0.13		
Sept 25 92	Mitsubishi	19:39	0.21	0.32	0.15	pen25_6	Temp:23.6°C RH:78.6%
Sept 25 92	GEC 20X	19:42	0.31	0.31	0.13		
Sept 25 92	Mitsubishi	19:42	0.34	0.33	0.14		

Figure 47. Pensacola, MRT Measurements (22-28 Sept 1992). (Sheet 1 of 3).

Date	System	Time	Large 4-Bar	Tank Grad	Targ Grad	Data File	Weather Conditions/Notes
Sept 25 92	GEC 14X	20:09	0.59	0.19	0.2	pen25_7	WX: Cloudy, Winds Subsiding
Sept 25 92	GEC 20X	20:11	0.51	0.18	0.2		Temp:23.6°C RH:78.8%
Sept 25 92	Mitsubishi	20:13	0.44	0.18	0.19		
Sept 25 92	Mitsubishi	20:30	0.3	0.24	0.16	pen25_8	Temp:23.6°C RH:78.9%
Sept 25 92	GEC 20X	20:30	0.31	0.24	0.16		
Sept 25 92	GEC 14X	20:31	0.34	0.24	0.17		
Sept 25 92	GEC 14X	20:55	0.51	0.21	0.28	pen25_9	Temp:23.6°C RH:78.7%
Sept 25 92	Mitsubishi	20:56	0.47	0.17	0.27		
Sept 25 92	Mitsubishi	21:12	0.03	0.26	0.29	pen25_10	Temp:23.6°C RH:78.8%
Sept 25 92	GEC 20X	21:13	0.09	0.27	0.26		
Sept 25 92	GEC 14X	21:14	0.14	0.28	0.27		
Sept 26 92	GEC 14X	19:03	0.52	0.26	0.18	pen26_1	WX: Cloudy & Windy, Occasional Drizzle, 2'-3' Waves
Sept 26 92	Mitsubishi	19:05	0.47	0.25	0.19		Temp:23.8°C RH:91.4%
Sept 26 92	Mitsubishi	19:21	0.16	0.21	0.23	pen26_2	Temp:23.8°C RH:92.1%
Sept 26 92	GEC 20X	19:27	0.4	0.24	0.27		
Sept 26 92	GEC 14X	19:29	0.53	0.27	0.31		
Sept 26 92	GEC 14X	20:50	0.46	0.33	0.29	pen26_3	Temp:23.8°C RH:92.7%
Sept 26 92	GEC 20X	20:52	0.39	0.45	0.18		
Sept 26 92	Mitsubishi	20:52	0.29	0.45	0.25		
Sept 26 92	Mitsubishi	21:00	0.16	0.53	0.21	pen26_4	Temp:23.6°C RH:92.6%
Sept 26 92	GEC 20X	21:01	0.18	0.58	0.2		
Sept 26 92	GEC 14X	21:03	0.31	0.47	0.17		
Sept 26 92	GEC 14X	21:42	0.6	0.25	0.12	pen26_5	WX: Precipitation stopped, better visibility.
Sept 26 92	GEC 20X	21:44	0.55	0.17	0.21		Temp:23.4°C RH:91.8%
Sept 26 92	Mitsubishi	21:46	0.39	0.24	0.17		
Sept 26 92	Mitsubishi	22:07	0.12	0.27	0.17	pen26_6	Temp:23.2°C RH:91.5%
Sept 26 92	GEC 20X	22:17	0.39	0.54	0.2		
Sept 26 92	GEC 14X	22:19	0.43	0.58	0.17		
Sept 27 92	GEC 14X	19:08	0.48	0.37	0.05	pen27_1	WX: Partly cloudy, light winds, clear visibility, no precip.
Sept 27 92	GEC 20X	19:10	0.57	0.28	0.04		Temp:24.3°C RH:86.3%
Sept 27 92	Mitsubishi	19:13	0.49	0.35	0.05		
Sept 27 92	Mitsubishi	19:22	0.26	0.38	0.08	pen27_2	Temp:24.3°C RH:85.6%
Sept 27 92	GEC 20X	19:29	0.32	0.36	0.06		
Sept 27 92	GEC 14X	19:30	0.37	0.35	0.06		

Figure 47. Pensacola, MRT Measurements (22-28 Sept 1992). (Sheet 2 of 3).

Date	System	Time	Large 4-Bar	Tank Grad	Targ Grad	Data File	Weather Conditions/Notes
Sept 27 92	GEC 14X	21:18	0.66	0.28	0.03	pen27_4	Temp:23.6°C RH:90.0%
Sept 27 92	Mitsubishi	21:29	0.37	0.3	0.02		
Sept 27 92	Mitsubishi	21:45	0.21	0.25	0.03	pen27-5	Temp:23.8°C RH:89.5%
Sept 27 92	GEC 20X	21:54	0.62	0.21	0.02		
Sept 27 92	GEC 14X	21:59	0.83	0.33	0.04		
Sept 28 92	GEC 14X	19:46	0.9	0.37	0.17	pen28_1	WX: Partly Cloudy, 3-4kts wind, no precip.
Sept 28 92	GEC 20X	19:53	0.64	0.3	0.16		Temp:25.1°C RH:79.7%
Sept 28 92	Mitsubishi	19:55	0.56	0.24	0.12		
Sept 28 92	Mitsubishi	20:12	0.18	0.27	0.01	pen28_2	Temp:25.0°C RH:78.5%
Sept 28 92	GEC 20X	20:19	0.55	0.33	0.09		
Sept 28 92	GEC 14X	20:20	0.59	0.33	0.06		
Sept 28 92	GEC 14X	21:03	0.68	0.34	0.04	pen28_3	Temp:24.6°C RH:79.3%
Sept 28 92	GEC 20X	21:04	0.61	0.28	0.09		
Sept 28 92	Mitsubishi	21:06	0.49	0.19	0.19		
Sept 28 92	Mitsubishi	21:19	0.16	0.3	0.13	pen28_4	Temp:24.6°C RH:79.3%
Sept 28 92	GEC 20X	21:29	0.56	0.37	0		
Sept 28 92	GEC 14X	21:30	0.7	0.28	0.05		
Sept 28 92	GEC 14X	21:57	0.74	0.3	0.15	pen28_5	Temp:24.3°C RH:80.3%
Sept 28 92	GEC 20X	21:59	0.67	0.35	0.07		
Sept 28 92	Mitsubishi	22:01	0.45	0.31	0.01		
Sept 28 92	Mitsubishi	22:13	0.11	0.26	0.13	pen28_6	Temp:24.0°C RH:80.9%
Sept 28 92	GEC 20X	22:23	0.61	0.23	0.2		
Sept 28 92	GEC 14X	22:24	0.71	0.31	0.19		

(Spatial Frequency) fx = 1/tan-1(2w/Rng) w1 = 5.33" w2 = 3.17" Rng = 825m
Large 4-Bar Target fx1 = 3.047 cycles/mrad
Small 4-Bar Target fx2 = 5.123 cycles/mrad (unresolvable at this distance)

Distance from FLIR Pad to 4-Bar Tank = 825 meters

Figure 47. Pensacola, MRT Measurements (22-28 Sept 1992). (Sheet 3 of 3).

3.4 EXPERIMENT 3 DATA

A complete listing of the weather data taken with the Omnidata stationary weather stations in Adak and Pensacola are in appendix A. The recorded weather data gathered includes temperature, relative humidity, wind speed, wind direction, and barometric pressure measurements. Appendix B lists the radiosonde data for Adak and Tallahassee that was acquired from NOCD.

4.0 APA EXPERIMENT ANALYSES AND RESULTS

With the completion of this report, the APA Program can be considered a success. In a period of 7 months, two APA Deployments were performed. The first APA deployment occurred at the Naval Air Station in Adak, Alaska from 20 to 28 February 1992. This APA deployment site was selected based on the results of the APA TSCA shown in section 2.5.1. The goal of this deployment was to perform APA experiments at a Northern latitude to encounter typical northern atmospheric and meteorological conditions; particularly, northern aerosol conditions; for example, low temperature, high wind speeds, and rough water. During this deployment, the atmospheric conditions were such that all of the above conditions were encountered, except for high wind speeds and large wave heights. It is, therefore, questionable whether or not a significant northern aerosol effect during this deployment was encountered. In section 4.1.5, the APA LOWTRAN analysis confirms this suspicion.

The establishment of the amount of aerosol effect, based on the measurement of the local meteorological conditions, is a difficult task. A review of historical work involving these specific imaging geometries is limited, but shows that the aerosol effect at elevation angles near 90° (horizontal look angles) is often the driving effect for infrared imaging. Molecular absorption and scattering coefficients are still a major factor, but aerosol effects become more than second-order effects. The problem, quite understandably, is an aerosol particle-size distribution and particle-number density problem. The atmosphere, especially at the ocean surface, (where aerosol generation is at its worst) is very dynamic. At certain times, the aerosol particle size distribution and number density is such that there are more particle sizes of 1 to 5 microns than 10 to 50 microns, and so transmittance in the 3- to 5-micron waveband will be less than that in the 8- to 14-micron waveband. At other times (localities), the exact opposite is true. These "certain times" translate to certain localities. The underlying assumption to this analysis is that bulk atmospheric effects at these localities and times influence and drive this aerosol effect. This appears to be a good assumption, given sufficient lag time in response under gross atmospheric changes. In Adak, the air was very dry and cold; the precipitable water content ranged from 2.7 to 4.7 mm/km.

Although the above assumption seems to be correct, many or all of these bulk effects must be present to have aerosols present. G. De Leeuw, a member of The Hague, The Netherlands (reference 6), has a method of measuring aerosol particles close to the ocean surface. He has concluded that his measurement technique produces accurate results.

There seems to be a problem with his technique, in that a spinning rod does not leave a method to determine if small drops collide to make more large drops, thus leading to more larger particles being counted than smaller particles. Aside from these differences, his results can be used qualitatively. He concludes that wind speeds of greater than 13 knots are required for significant aerosol particles to be generated. One important aspect of his paper is that he concludes that, at wind speeds of 13 knots and higher, the maxima of particles occur at 1- to 2-meter heights above the sea. From reference 6, the aerosol concentration is still significant at a height of 6 meters.

At Adak Island, it was not possible to get close to the ocean surface. The spectroradiometer height above the water was measured to be 3 meters, while the 36-inch collimator was 5 meters above the ocean surface at high tide. Based on results from De Leeuw's paper, every attempt to run tests at 1 to 2 meters in height were made. No aerosol effects were seen in the clear-day data. The wave action during these days was 1 to 2 feet and the wind speeds were 15 knots, with gust to 20 knots. The weather conditions encountered during the Adak deployment, seemed to all fall under these conditions; for example, rougher weather was not experienced. During the two weeks, there were two sets of weather conditions: clear days and light or heavy snow days. Data was collected during all these conditions, that provided a good mix of data. The test results were very surprising.

The APA Adak Transmittance Measurements in Experiment 1 proved to be a success. On the Adak Island deployment, the proposed experimental technique deviated slightly from that shown in the APA Test Plan. First, only one range, 1160 meters, was used; second, the spectroradiometer was pointed along the long path as much as possible and rotated to make a 5-inch calibration run when weather was calm. The first deviation was that the runs were made with the collimator and Blackbody source covered. There were also problems with the Blackbody source controller failing because it was too cold. A wind and snow break, which had to be built around the 36-inch collimator because of the physical layout of Sweeper Cove, did not allow the collimator to be moved around as was anticipated. The second deviation was caused by the snow storms that came into the cove very rapidly, but lasted only a few minutes; the equipment was aligned and data collected as the snow storm started.

The MRT Measurements in Experiment 2 also proved successful. The measurements were performed at a range of 685 meters; thus, the two spacial frequencies were 2.537 cycles per milliradian and 4.228 cycles per milliradian. The blackbody tank performed well. The only problem encountered was the effect of the sun on the target's temperature. This effect was much faster than was experienced in San Diego and was limited to morning and late afternoon runs only. The GEC Avionics 8- to 14-micron Scanning SPRITE FLIR system was equipped with a 254-mm lens; the Kodak 3- to 5-micron SFPA with a 300-mm lens; and the Mitsubishi 3- to 5-micron SFPA with a 200-mm lens.

The APA Weather Station Measurements in Experiment 3 was successful. Both stations recorded the data required. At weather station 2, the relative humidity meter failed the second day and worked intermittently throughout the deployment, but this was the only problem encountered.

The second and final APA Deployment occurred at the Naval Air Station in Pensacola, Florida from 20 to 28 September 1992. This APA deployment site was selected, based on the results of the APA TSCA shown in section 2.5.1. The goal of this deployment was to perform the APA experiments under very high temperatures and high humidity atmospheric conditions. This goal was reached, given that the APA Pensacola deployment's analysis temperature ranged from 24° to 29°C; with a relative humidity range of 66% to 99%; the precipitable water content ranged from 18.4 to 23.3 mm/km. The results were also very surprising. In section 4.1.4, the APA transmittance measurements for Adak and Pensacola are compared. This section represents the most important goal of the entire APA analysis. The results of this comparison lead to many interesting questions that should be resolved. The APA goal of gauging the relative performance differences between the 3- to 5-micron and 8- to 14-micron wavebands was also met. Finally, in section 4.1.5, the results of the APA LOWTRAN 7 comparison analysis are shown. The hope that LOWTRAN could be forced to be more consistent, given this special periscope imaging geometries and standard radiosonde data inputs, was unfortunately not realized.

4.1 APA EXPERIMENT #1 ANALYSIS AND RESULTS

4.1.1 Transmissometry Errors

As discussed in section 3.1, the major contributor of the percent error of the transmittance measurements was found to be the error in the conversion factor, C. From figure 33, the percent error in the C function for the 3- to 5-micron region is between 1% and 2%. The error in the 8- to 14-micron region was higher and ranged from 2% to 5%. To determine the total error in the transmissometry, it is necessary to use the following equation developed in section 2.3.1:

$$\frac{\Delta T}{T} \approx \frac{\Delta S_{36}}{S_{36}} + \frac{\Delta S_5}{S_5} + \frac{2\Delta R_2}{R_2} + \frac{2\Delta R_1}{R_1} + \frac{\Delta C}{C} \tag{30}$$

Since the fractional errors in the ranges were both below 0.1%, they will be ignored as negligible. Using the maximum fractional error in the signal response of each of the collimators of 1%, the total percent error in the transmittance measurements in Adak for the 3- to 5-micron range was between 3% and 4%. The total percent error for the 8- to 14-micron range was between 4% through 7%.

Figure 35 shows the percent error of the C function in Pensacola. Although the graph looks similar to the Adak figure, the errors were much higher overall in Pensacola. The signal levels were much lower in Pensacola due to the high water content in the atmosp'.ere. The greatest signal response decrease was seen in the 8- to 14-micron region, continually decreasing with longer wavelength. The errors in the 8- to 14-micron region for Pensacola began lower than the Adak error, but had a greater variability and obtained a higher percent error as it approached 12 microns. The C function errors in Pensacola for the 3- to 5-micron region were between 1% through 4%, while the errors for the 8- to 14-micron region were between 1% through 5%. The total percent error in the

transmittance measurements in Pensacola were between 3% through 6% in the 3- to 5-micron region and between 3% through 7% in the 8- to 14-micron region. The error in wavelength of the spectroradiometer was given as 1.5%.

4.1.2 Adak Transmittance Results

Figures 36 through 41 show the APA Transmittance curves as measured in the ADAK deployment. The weather conditions encountered were clear, light and heavy snow. The snow days provided interesting data since it shows some transmittance differences between the two wavebands.

Figure 36 shows the transmittance values as measured on 20 February 1992 on Adak Island. The transmittance for the 3- to 5-micron waveband averages to be 98.1% (for run number 0001) for the band of 3.479 to 3.995 microns; 86.1% for 4.612 microns; whereas, the 8- to 14-micron waveband averages to be 93.4% for 8.969 to 11.498 microns. Not much difference in transmittance, only 4.7%, was measured in the two wavebands, and they were both relatively high. The following transmittance data shows:

Tran0001:	3.479-3.995 microns	98.1%	
(Clear Day)	4.612 microns	86.1%	
	8.969-11.498 microns	93.4%	Difference of 4.7%
Tran0003:	3.479-3.995 microns	96.8%	
(Clear Day)	4.612 microns	85.3%	
	8.969-11.498 microns	92.2%	Difference of 4.6%
Tran0004:	3.479-3.995 microns	97.5%	
(Clear Day)	4.612 microns	86.1%	
	8.969-11.498 microns	95.7%	Difference of 1.8%
Tran0005:	3.479-3.995 microns	97.4%	
(Clear Day)	4.612 microns	86.1%	
	8.969-11.498 microns	94.7%	Difference of 2.7%

Figure 37 shows the transmittance values as measured on 22 February 1992 on Adak Island. As one can see the transmittance for the 3- to 5-micron waveband averages to be 96% for the band of 3.479 to 3.995 microns; 84.5% for 4.612 microns; whereas, the 8- to 14-micron waveband averages to be 89% for the 8.969 to 11.498 microns. Not much difference in transmittance was measured in the two wavebands, and they were both relatively high.

Figure 38 shows the transmittance values as measured on 23 February 1992 on Adak Island. As one can interpret from this data, a snow storm is recorded in this data. Run number Tran0051 represents a run during the middle of the snow period. The transmittance during the light snow averages to be 82.7% for the band of 3.479 to 3.995 microns; 72.4% for 4.612 microns; whereas, the 8- to 14-micron waveband averages to be 78.2% for 8.969 to 11.498 microns. Although the signal was lower during the light snow, the difference in the two wavebands was still only 4.5%.

Figure 39 shows the most dramatic case of light-to-heavy snow fall transmittance values as measured at Adak Island on 24 February 1992. The snow began tc fall heavily, starting with Tran0065, and the heaviest snowfall occurred during Tran0066. The snow then decreased and high signal levels were recorded in Tran0069. The heavy snow came back, as represented in Tran0070 and Tran0071. It is interesting to note that, while the snow storm was coming in during the run of Tran0065 (10 consecutive measurements), the signal levels dropped from 95% to 70% in just 80 seconds. The following transmittance data is recorded for the beginning and the end of run Tran0065. A majority of these runs occurred during a heavy snow fall that provided a great difference in the transmittance values between the two bands, with the 3- to 5-micron waveband having a relatively higher transmittance values.

Tran0065A:	3.479-3.995 microns	95.0%	
(No Snow)	4.612 microns	86.1%	
Start of Run	8.969-11.498 microns	91.4%	Difference of 3.6%
Tran0065D:	3.479-3.995 microns	83.7%	
(Lt Snow)	4.612 microns	75.5%	
During Run	8.969-11.498 microns	74.3%	Difference of 9.4%
Tran0065K:	3.479-3.995 microns	70.6%	
(Lt Snow)	4.612 microns	62.6%	
End of Run	8.969-11.498 microns	63.9%	Difference of 6.7%

The following transmittance data values for the run of Tran0066 (10 consecutive measurements) show the variations during heavy snowfall. This provides greater detail as to the degrading effect of snowfall over a short period of time (80 seconds).

Tran0065A:	3.479-3.995 microns	13.5%	
(Hv Snow)	4.612 microns	11.8%	
Start of Run	8.969-11.498 microns	09.6%	Difference of 4.0%
Tran0065R:	3.479-3.995 microns	16.0%	
(Hv Snow)	4.612 microns	14.8%	
During Run	8.969-11.498 microns	13.1%	Difference of 2.9%
Tran0065S:	3.479-3.995 microns	19.0%	
(Hv Snow)	4.612 microns	15.5%	
During Run	8.969-11.498 microns	14.2%	Difference of 4.8%
Tran0065U:	3.479-3.995 microns	19.8%	
(Hv Snow)	4.612 microns	15.8%	
During Run	8.969-11.498 microns	15.9%	Difference of 3.9%
Tran0065V:	3.479-3.995 microns	22.2%	
(Hv Snow)	4.612 microns	19.0%	
End of Run	8.969-11.498 microns	18.0%	Difference of 4.2%

Figure 40 shows another case of light snow fall as measured on 25 February 1992 on Adak Island. Figure 41 shows the transmittance values as measured on 27 February on Adak Island for a relatively clear weather day. Some of the values are as follows:

Tran0090:	3.479-3.995 microns	94.2%	
(No Snow)	4.612 microns	85.2%	
	8.969-11.498 microns	86.2%	Difference of 8.0%
Tran0091:	3.479-3.995 microns	93.7%	
(No Snow)	4.612 microns	85.5%	
	8.969-11.498 microns	89.2%	Difference of 4.5%
Tran0093:	3.479-3.995 microns	93.3%	
(No Snow)	4.612 microns	85.2%	
	8.969-11.498 microns	87.6%	Difference of 5.7%
Tran0095:	3.479-3.995 microns	92.1%	
(No Snow)	4.612 microns	85.9%	
	8.969-11.498 microns	88.2%	Difference of 3.9%

4.1.3 Pensacola Transmittance Results

Figures 42 through 45 show the APA Transmittance curves measured in the Pensacola deployment. The weather conditions encountered were as follows: 66% to 90% relative humidity; 24° to 28.4°C air temperature; precipitable water contents from 18.4 mm/km to 23.3 mm/km; wind speeds from 2.7 to 11.5 knots. Unlike the transmittance curves for Adak, these curves were not flat across the two waveband regions. Because of great variations in the transmittance, six ranges were chosen, measured and averages calculated. As can be seen, there are great differences in transmittance between the 3- to 5-micron and 8- to 14-micron wavebands. Most of the curves showed the transmittance of the 8- to 14-micron region to be approximately 75% of the transmittance in the 3- to 5-micron region.

Figures 42, 43 and 44 show the transmittance measured in Pensacola on 21, 22 and 23 September 1992, respectively. The averages for the ranges within the two wavebands are listed below. The difference between the 3- to 5-micron and 8- to 14-micron wavebands was very great. The difference given below is a comparison of the highest transmittance in 3- to 5-micron waveband and the lowest in the 8- to 14-micron waveband. The higher the precipitable water content, the greater the difference between the two wavebands.

Tran0001:	3.016-3.247 microns	14.7%	
(21.8 mm/km)	3.479-3.621 microns	80.9%	
	3.639-3.994 microns	87.2%	
	4.612 microns	54.6%	
	8.969-9.601 microns	64.2%	
	9.659-12.01 microns	48.7%	Difference (Max to Min): 38.5%

Tran0026:	3.016-3.247 microns	13.7%	
(23.3 mm/km)	3.479-3.621 microns	75.7%	
	3.639-3.994 microns	81.4%	
	4.612 microns	50.6%	
	8.969-9.601 microns	53.4%	
	9.659-12.01 microns	40.0%	Difference (Max to Min): 41.4%
Tran0059:	3.016-3.247 microns	18.5%	
(18.4 mm/km)	3.479-3.621 microns	88.6%	
	3.639-3.994 microns	93.7%	
	4.612 microns	60.6%	
	8.969-9.601 microns	68.7%	
	9.659-12.01 microns	57.9%	Difference (Max to Min): 35.8%

4.1.4 Final Atmospheric Transmittance Comparison

The individual comparisons of the measured atmospheric transmittance values shown in section 4.1.2 and 4.1.3 are very revealing, but surprising comparisons occurred when relating the APA Adak transmittance values to those of the APA Pensacola transmittance values.

As detailed in the APA TSCA, both of the APA Deployment sites have specific atmospheric and meteorological conditions that differ significantly. In fact, these test sites were chosen because they represent the two known "atmospheric condition bounds" that most influence infrared atmospheric propagation; thus, infrared imaging sensor performance. The APA Adak deployment sought Northern latitude atmospheric conditions such as cold-dry air with the occasional cold and rough precipitation; such as, rain, sleet, fog, hail, and snow. During the APA Adak deployment, cold temperatures (ranging from -1.1°C to 4°C) with occasional light, moderate, and heavy snow fall were encountered. The precipitable water content varied from 2.7 to 4.7 mm/km; therefore, we had very cold-dry air a majority of the time. The APA Pensacola deployment sought the opposite bounds to these cold, northern aerosol conditions; for example, we sought high temperature and high humidity atmospheric conditions. These desired conditions were encountered in Pensacola with the temperature ranging from 24°C to 29°C and relative humidity ranging from 66% to 90%. The precipitable water content varied from 18.4 to 23.3 mm/km; thus, very warm and wet air was encountered in Pensacola.

Figure 48 shows the *range corrected* transmittance measurements for selected Adak transmittance and Pensacola transmittance runs. **Range corrected** means the transmittance measurements are all normalized for a 1-kilometer path length. This correction allows a comparison to be made between the APA Adak and the APA Pensacola results.

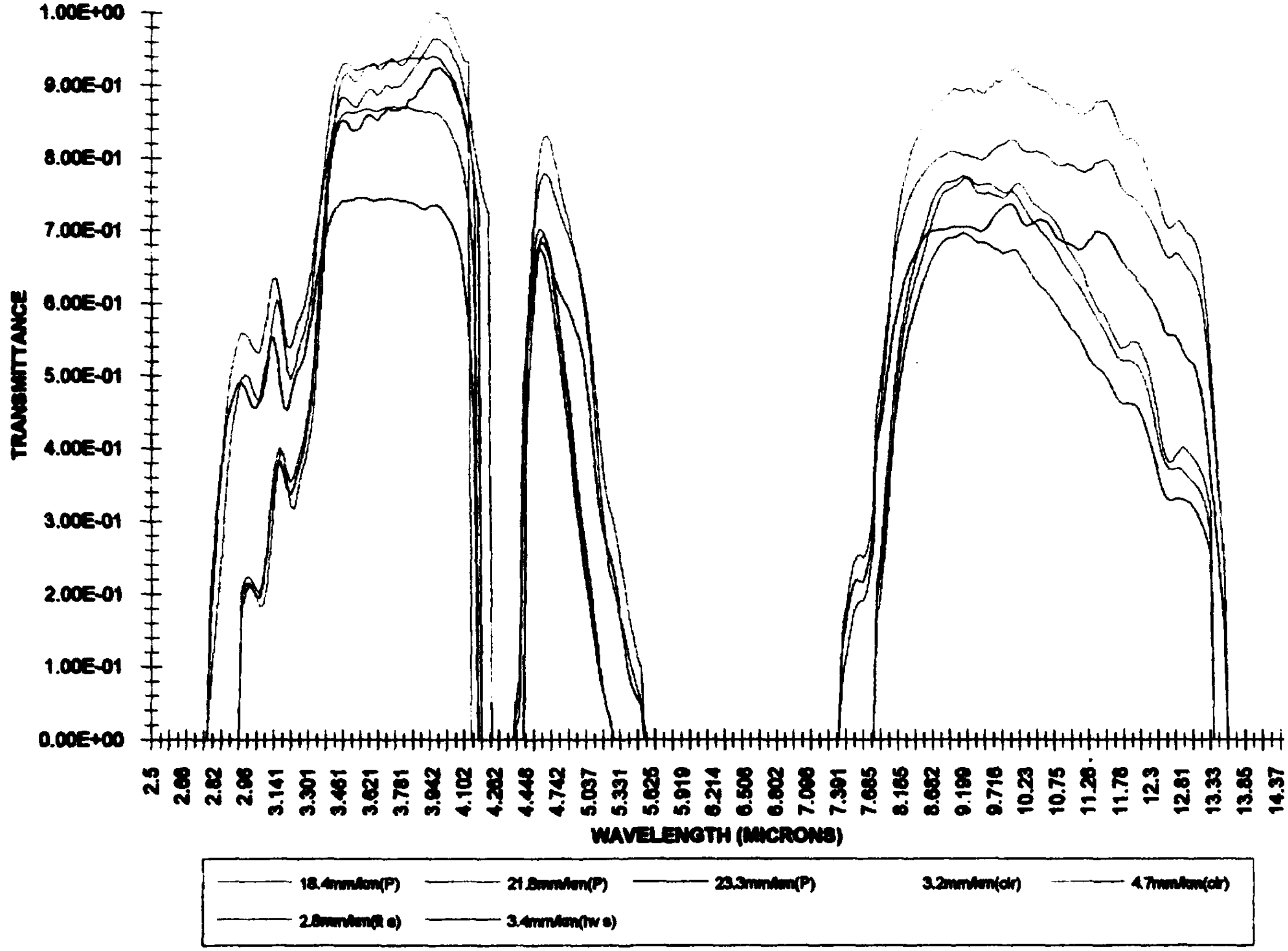


Figure 48. Adak versus Pensacola water content (range corrected).

The first part of this comparison must be the difference in transmittance measurements in the 3- to 5-micron waveband to those in the 8- to 14-micron waveband. From figure 48, to compare these differences, the exact wavelength regions inside the 3- to 5-micron and 8- to 14-micron wavebands must first be selected. From sections 4.1.2 and 4.1.3, exact wavelength regions were selected based on the deployment data. For the Adak data, three wavelength regions-of-interest were selected: 3.479 to 3.995 microns; 4.612 microns; 8.9 to 11.498 microns.

For the Adak data, the 3.479- to 3.995-micron wavelength region was selected because it represented the most "flat section" of the first atmospheric window in the 3- to 5-micron waveband. The wavelength at 4.612 microns was selected as the second point-of-interest since it represents the approximate peak transmittance in the second window in the 3- to 5-micron band. Finally, the 8.9- to 11.498-micron wavelength region was selected because it represented the most "flat section" of the atmospheric window in the 8- to 14-micron waveband.

For the Pensacola data, it was necessary to select different wavelength regions-of-interest because of the changes that occurred within the chosen Adak wavelength regions. For the Pensacola data, the 3.016- to 3.247-micron wavelength was selected because the transmittance in this waveband was very much higher than it was in the Adak data. The 3.479- to 3.621-micron wavelength region was selected because it represented the most "flat section" of the first atmospheric window in the 3- to 5-micron waveband. The 3.639- to 3.994-micron wavelength range was selected to cover the rest of this first atmospheric window, as well as, to cover a strange transmittance peak that occurred only in the Pensacola data for this wavelength region. The wavelength at 4.612 microns was selected as a point-of-interest, since it represented the wavelength where the approximate peak transmittance occurs in the second atmospheric window of the 3- to 5-micron waveband. This point was also selected because it allows for better comparison between the Adak and the Pensacola data. The 8.969- to 9.601-micron wavelength range was selected because it represented the most "flat section" of the atmospheric window in the 8- to 14-micron waveband for the APA Pensacola data. Finally, the 9.659- to 12.01-micron wavelength region was selected to cover the rest of the 8- to 14-micron waveband. It should be noticed, in the APA Pensacola data, just how rapidly the transmittance drops off in this region.

There is nothing very special in the selection of the different wavelength regions-of-interest in the APA Adak and APA Pensacola data; however, they do allow a better method to compare the resulting transmittance measurements. This type of wavelength region data is important because it allows the selection of possible infrared bandpass filters. Normally, specific line and bandpass filters are not incorporated in 8- to 14-micron FLIR systems. The data shown in figure 48 tend to reaffirm this conclusion; however, various line and bandpass filters are quite often employed in 3- to 5-micron FLIR systems.

The data in figure 48 shows why this is the case. Some 3- to 5-micron FLIR systems operate over the entire 2.5- to 5.7-wavelength region, but most systems incorporate band filters that cut off all wavelengths greater than 4.6 microns to lower the resulting noise. Figure 4.1 reaffirms this concept and tends to suggest that this cut-off band should

possibly be decreased to 4.2 microns. The trade-off is that, given a specific detector, an increase in the wavelength response generally lowers the overall detectivity. Conversely, a decrease in the wavelength response will generally increase the overall detectivity. It is a maximization of the total area under the curve integrated responses that corresponds to the greatest sensor performance. This trade-off analysis should be performed by the Photonics Mast Systems's FLIR manufacturer using the data in figure 48.

The comparison of the difference in atmospheric transmittance measurements, versus each specific atmospheric and meteorological condition, is shown in figure 48. The curve, identified as having a precipitable water content of 4.7 mm/km (pink), represents a relatively cold-clear day in Adak with the following specifications:

Site	Time/Date	S_H	R_H	Range	Corrected Range
Adak	16:10, 20 Feb 92	2 m	5 m	1160 m	1000 m

T	Rel.H	P	V_{ws24hr}	P_w
3.4°C	71.3%	1010 mb	9 kn	4.7 mm/km

From the curve, the transmittance is

Tran 0002:	3.479 - 3.995 microns	= 94%
(Clear Day)	4.612 microns	= 83%
(Range Corrected)	8.969 - 11.498 microns	= 92%

and so under these conditions, the 3.4- to 4.0-micron region is 2% higher than that of the 8.9- to 11.5-micron region.

The curve, identified as having a precipitable water content of 3.2 mm/km (yellow), represents another relatively cold-clear day in Adak, and it has the following specifications:

Site	Time/Date	S_H	R_H	Range	Corrected Range
Adak	11:10, 22 Feb 92	2 m	5 m	1160 m	1000 m

T	Rel.H	P	V_{ws24hr}	P_w
0.0°C	68.7%	1006 mb	12 kn	3.2 mm/km

From the curve, the overall transmittance is slightly higher for this Adak clear day. This makes sense because the precipitable water content for this day and time was lower.

Tran 0021:	3.479 - 3.995 microns	= 95%
(Clear Day)	4.612 microns	= 86%
(Range Corrected)	8.969 - 11.498 microns	= 96%

And under the above condition, the 8.9- to 11.5-micron region is slightly higher (by only 1%) than the 3.4- to 4.0-micron region.

The curve, identified as having a precipitable water content of 2.8 mm/km (light blue), represents a cold day in Adak when the APA transmittance measurements were performed during a light snowfall. This transmittance run had the following specifications:

Site	Time/Date	S_H	R_H	Range	Corrected Range
Adak	13:40/23 Feb 92	2 m	5 m	1160 m	1000 m

T	Rel.H	P	V_{ws24hr}	P_w
-0.9°C	58.5%	118 mb	12 kn	2.8 mm/km

From this curve, the overall transmittance during this light snowfall is lower than those for the two Adak clear days. It was interesting to learn that, like rain, atmospheric transmittance through snow is not banded; for example, the transmittance values are lower; however, one infrared waveband is not lowered more than the other.

Tran 0047	3.479 - 3.995 microns	≈ 87%
(Lt. Snow)	4.612 microns	≈ 78%
(Range corrected)	8.969 - 11.498 microns	≈ 81%

So when one compares these values with the Adak clear day data on 22 February 1992 (since it has the closest precipitable water content to this day), the 3.479- to 3.995-micron region drops 8.0%; while at the wavelength of 4.612-microns, the value also drops 8%; finally, the 8.969- to 11.498-micron region drops the most at 15%. Again, the difference between the 3.4- to 4.0-micron and 8.9- to 11.5-micron wavelength regions has the short waveband having a slightly higher overall transmittance by 6%.

This same general trend is also affirmed from the curve that is identified as having a precipitable water content of 3.4 mm/km (black), but also represents a day in Adak when the APA transmittance measurements were performed during a heavy snowfall. It should be noted from section 4.1.2, that as the amount of snowfall increased, both wavebands had their transmittances reduced drastically. In fact, under a "white-out" condition, designated under Tran 0065A at the start of a run, the transmittance in the 3.4- to 4.0-micron region was 13.5%, while that of the 8.9- to 11.5-micron region was only 9.6. This translates to only a 3.9% difference; again, both wavebands transmittance values were reduced significantly. From the black curve, we see that, although the snowfall was heavy, it was not a "white-out" condition. The bulk conditions during this measurement were:

Site	Time/Date	S_H	R_H	Range	Corrected Range
Adak	15:00, 24 Feb 92	2 m	5 m	1160 m	100 m

T	Rel.H	P	V_{ws24hr}	P_w
-1.1°C	76.0%	1006 mb	6 kn	3.4 mm/km

From this data, the overall transmittance in both wavebands is lowered again, and both bands are reduced by about the same amount.

Tran 6508	3.479 - 3.995 microns	≈ 75%
(Hv Snow)	4.612 microns	≈ 69%
(Range Corrected)	8.969 - 11.498 microns	≈ 70%

Comparing this data to 22 February 1992 Adak data, it is concluded that the heavy snowfall reduces the transmittance in the 3.4- to 4.0-micron region by 20%, while it

reduced the transmittance in the 8.9- to 11.5-micron region by 26%. The difference between the 3.4- to 4.0-micron and 8.9- to 11.5-micron regions is only 5%, with the transmittance in the 3.4- to 4.0-micron region being higher.

These four examples tended to support the conclusions that, given the cold-dry air conditions encountered in Adak, the differences in atmospheric transmittance in the 3- to 5-micron versus the 8- to 14-micron region is very slight. The difference is only 1% to 2% for clear days, and increases to 6% to 8% difference under various snowfall conditions. Under the Adak clear day conditions, both wavebands had very high atmospheric transmittance; for example, in excess of 90%. Under the various Adak snowfall conditions, this atmospheric transmittance dropped slowly. With "white-out" conditions (visibilities less than 3 feet), the atmospheric transmittances in both bands were 10% to 14% with the 3- to 5-micron region having a slightly higher transmittance. This could indicate that, under these atmospheric and meteorological conditions, one waveband was not better than the other in terms of final atmospheric transmittance; however, from the APA Pensacola data, the conclusion does not hold.

From figure 48, the red curve represents a hot and humid day in Pensacola, Florida. The relative humidity during this APA transmittance run was lower than what occurred on most of the APA Pensacola days, and this translated to a lower precipitable water content. The bulk specifications during this run were:

Site	Time/Date	S_H	R_H	Range	Corrected Range
Pensacola	13:45/23 Sep 92	1 m	3 m	1685 m	1000 m

T	Rel.H	P	V_{ws24hr}	P_w
27.5°C	66%	1013 mb	4.9 kn	18.4 mm/km

From this curve, the transmittance is:

Tran 59_60	3.016 - 3.247 microns	= 37%
(18.4 mm/km)	3.479 - 3.621 microns	= 92%
(Range Corrected)	3.639 - 3.994 microns	= 97%
	4.612 microns	= 69%
	8.969 - 9.601 microns	= 76%
	9.659 - 12.01 microns	= 70%

Given the precipitable water content of 18.4 mm/km, the differences (93% to 72%) in the atmospheric transmittance, between the 3.4- to 4.0-micron region and the 8.9- to 12.0-micron region, was approximately 21%.

The green curve, identified as having a precipitable water content of 21.8 mm/km, represents another hot and humid day in Pensacola. This day had a higher precipitable water content because the relative humidity was higher. This APA transmittance run occurred under the following set of specifications:

Site	Time/Date	S_H	R_H	Range	Corrected Range
Pensacola	16:50/21 Sep 92	1 m	3 m	1685 m	1000 m

T	Rel.H	P	V_{ws24hr}	P_w
27.8°C	80%	1012 mb	9.2 kn	21.8 mm/km

From this curve, the transmittance is:

Trans 08_11	3.016 - 3.247 microns	= 38%
(21.8 mm/km)	3.749 - 3.621 microns	= 89%
(Range Corrected)	3.639 - 3.994 microns	= 94%
	4.612 microns	= 70%
	8.969 - 9.601 microns	= 77%
	9.659 - 12.01 microns	= 69%

Given the precipitable water content of 21.8 mm/km, the differences (91% to 72%) in the atmospheric transmittance, between the 3.4- to 4.0-micron region and the 8.9- to 12.0-micron region, was approximately 19%.

Finally, the dark blue curve, identified as having a precipitable water content of 23.3 mm/km, represents a very hot and humid day in Pensacola. This day had the highest precipitable water content encountered in Pensacola. The following specifications occurred:

Site	Time/Date	S_H	R_H	Range	Corrected Range
Pensacola	13:35, 22Sep92	1 m	3 m	1685 m	1000 m

T	Rel.H	P	V_{ws24hr}	P_w
28.3°C	77.5%	1014 mb	11.5 kn	23.3 mm/km

From this curve, the transmittance is:

Tran 26_30	3.016 - 3.247 microns	= 36%
(23.3 mm/km)	3.479 - 3.621 microns	= 85%
(Range corrected)	3.639 - 3.994 microns	= 90%
	4.612 microns	= 67%
	8.969 - 9.601 microns	= 69%
	9.659 - 12.01 microns	= 59%

Given the higher precipitable water content (23.3 mm/km), the differences (87% to 62%) in the atmospheric transmittance between the 3.4- to 4.0-micron region and the 8.9-to-12.0 micron region was approximately 25%.

Comparing these three data sets APA Pensacola, it is not surprising that as the precipitable water content increased (from 18.4 to 23.3 mm/km), the overall atmospheric transmittance in both wavebands was reduced. In fact, given this increase in water content over the path, the 3.4- to 4.0-micron region dropped approximately 6% and the 8.9- to 12.0-micron region dropped approximately 10%. Extending this concept further, one sees that, when comparing the APA Adak data to the APA Pensacola data, as the precipitable water increased (from 3.2 to 23. 3 mm/km), the overall transmittance in both bands dropped. The 8- to 14-micron wavelength region was significantly more affected. The 3.4- to 4.0-micron region transmittance dropped approximately 8%, while the 8.9- to 12.0-micron region's transmittance dropped approximately 34%.

This conclusion affirms the generally accepted principle that the 3- to 5-micron FLIR systems perform better than the 8- to 14-micron FLIR systems under hot and high humidity conditions. Figures 49 and 50, which show enlarged views of figure 48, are the two infrared wavebands of interest. These figures show the strong and weak atmospheric absorption bands identified in table 2. These figures display some surprising results; in the comparison of the APA Adak runs, there are quite normal atmospheric transmittance windows. Given the relatively low precipitable water content along the APA Adak optical path, the weak water absorption band at $\lambda = 3.2$ shows a much smaller effect in the Adak runs than the Pensacola runs where the amount of water in the optical path was much more. In the 3.4- to 4.2-micron wavelength region, the APA Adak transmittance runs were relatively well-behaved and flat, while the APA Pensacola transmittance runs in this wavelength region exhibited some interesting structure. At the center of the two nitrous oxide (N_2O) absorption bands at 3.9 and 4.05 microns, the APA Pensacola transmittance values increased and peaked at approximately 3.96 microns. The APA Adak transmittance values are still rather flat in this region. This tends to suggest that the absorber amount of N_20 was less in Pensacola than in Adak. This might have something to do with the rain that occurred during the APA Pensacola deployments.

In a similar manner, the carbon monoxide absorber amounts in Pensacola may have been larger than in Adak at the wavelength of 4.6 microns. This makes sense, in that Pensacola was much more of an urban environment than Adak Island; therefore, more SMOG levels can be expected in Pensacola because an increased amount of CO is present. In the 8- to 14-micron wavelength region, the APA Adak transmittance runs were again more well-behaved than those of the APA Pensacola runs.

The APA Adak transmittance runs were fairly flat across long wavebands with only the quite common minor fluctuations and structures. Conversely, the transmittance values for the APA Pensacola runs were not very well-behaved. At approximately 10 microns, these atmospheric transmittance values fall off dramatically showing much much structure and fluctuations. At this wavelength, the carbon dioxide absorption band becomes more and more dominant. The amount of CO_2 present in Pensacola should have been much higher than that present in Adak, given that Pensacola was hot and humid, and had much more vegetation than the cold-arid environment in Adak. Whether or not the variation in the CO_2 amount can entirely explain these fluctuations is unknown. Again, a method to measure the CO_2 absorber would be very helpful. It is suspected that this effect is not all attributed to CO_2 absorption, but to water and aerosol scattering. Unfortunately, the APA Program did not have a method to verify this supposition. To better understand this effect, a methodology that measures the amount of CO_2 present must be incorporated into APA to allow the indirect measurement of the water aerosol particle scattering effect.

The data, shown in figures 48 to 50, allow the forming of final con-lusions; for example,

1. Under the atmospheric conditions of very low precipitable water content (2.7 to 4.7 mm/km) and even under the various forms of cold precipitation (rain, light snow, heavy snow), the atmospheric transmittance in each of the infrared wavebands is very high (in excess of 90%); thus, there is no appreciable difference in atmospheric transmittance.

2. Under the atmospheric conditions of very high precipitable water content (18.4 to 23.3 mm/km), the atmospheric transmittance in the 3- to 5-micron waveband can be as much as 25% to 30% higher than in the 8- to 14-micron waveband.

4.1.5 Atmospheric Computer Modeling Analysis and Results

The comparison of the prediction results derived from the LOWTRAN computer codes versus actual APA transmittance measurements is one of the goals of the APA analysis. This analysis by comparison yields multiple benefits. First, it allows the prediction results of LOWTRAN to be validated, given these special submarine-imaging geometries, and the different bulk meteorological conditions that occurred during the APA Deployments. This type of analysis also allows the prediction results of the two most common versions of LOWTRAN (LOWTRAN 6 and LOWTRAN 7) to be compared for verification that certain corrections to the code in LOWTRAN 7 have the desired effect, given these special imaging geometries. Finally, this comparison allows the APA analyst a method to predict how much effect the aerosols had on the APA data. This last comparison is based on the simple difference between the APA transmittance data and the data predicted by LOWTRAN, assuming a No Aerosol Model case (IHAZE=0). It should be noted that this last comparison is subject to all the errors in the APA Experiment, and all the errors in the LOWTRAN predictions, given LOWTRAN's data inputs; thus, this should be used qualitative to describe the data, rather than as a method to quantitatively predict the amount of aerosol encountered during the APA deployments.

As detailed earlier, previous work in this area of LOWTRAN validation is rare. References 5 and 9 through 12 are the most applicable sources, given the special close-to-the-ocean imaging geometries used during the APA deployments. Since the deployments covered the two bounding atmospheric conditions sought; for example, the APA Adak deployment sought a northern aerosol atmospheric conditions (high wind speed, rough water, cold-arid environment) and the APA Pensacola deployment sought a high humidity and temperature (high precipitable water content). The goal is to validate LOWTRAN at these two bounds. If LOWTRAN, which is again just a mathematical model, could be forced to agreement at these two bounds, then LOWTRAN could be employed throughout the world under various meteorological conditions to predict the atmospheric transmittance in these two infrared wavebands. This would eliminate the need to perform the costly APA deployments. From the APA data, one will see that it is a lofty and most difficult goal to attain.

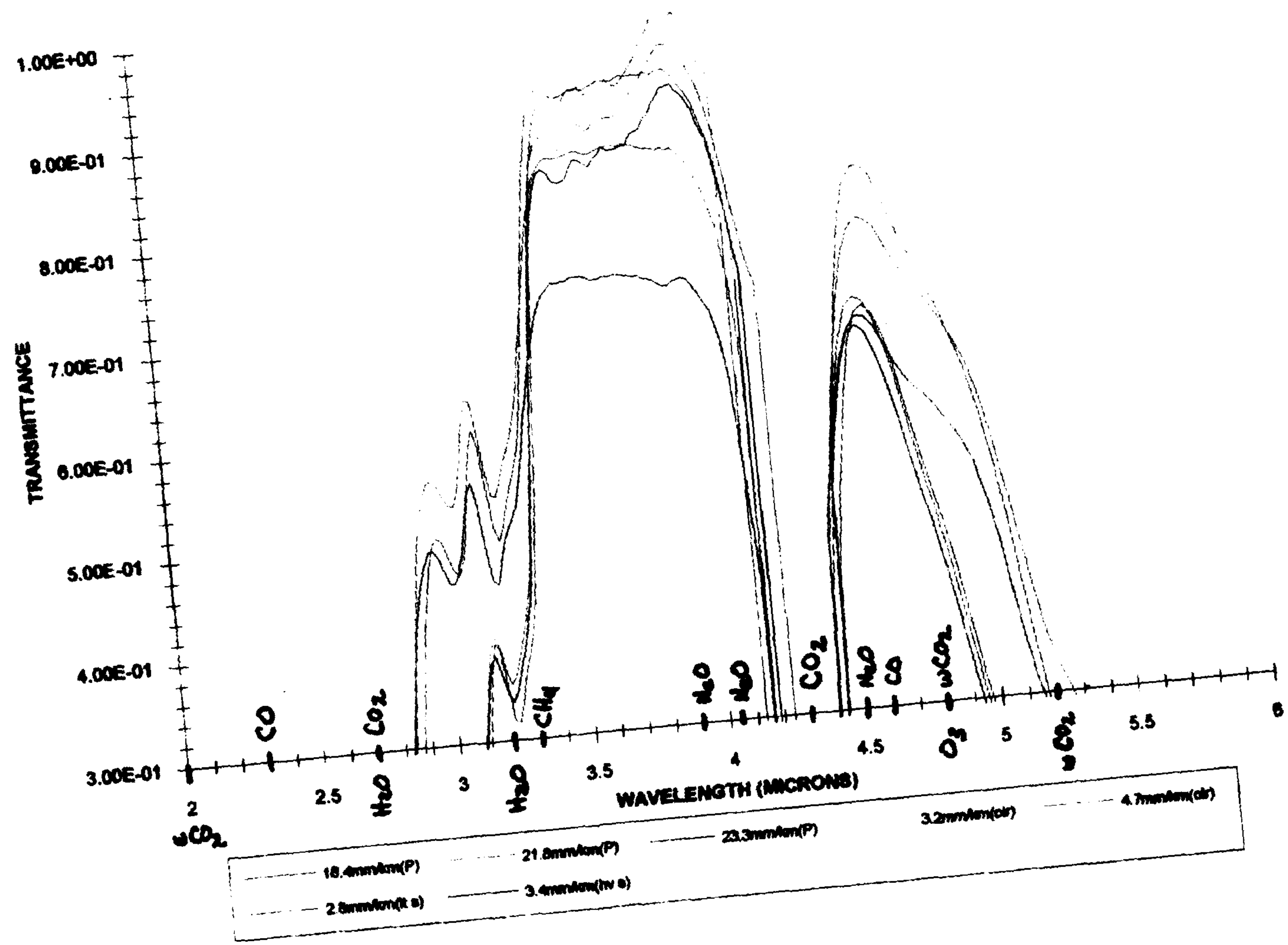


Figure 49. Adak versus Pensacola water content (range corrected, blow-up).

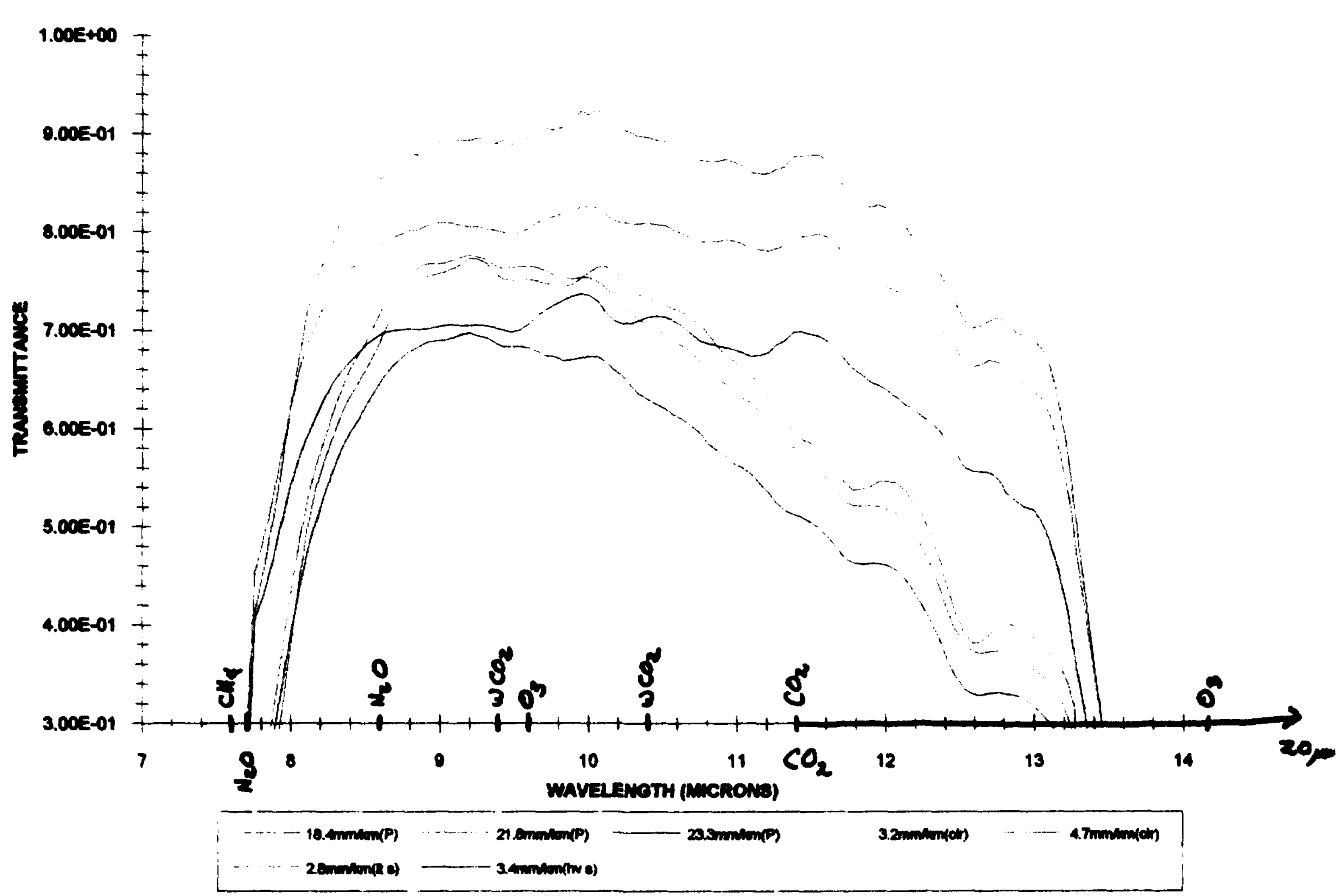


Figure 50. Adak versus Pensacola water content (range corrected, blow-up).

References 5 and 9 through 12 detail this degree of difficulty. LOWTRAN's prediction results are adversely effected by many of the conditions that were required under the APA analysis. Conditions, such as, the special near-horizontal path, the optical paths closeness to the ocean surface, and the degree of layering of the radiosonde data inputs, all serve to provide problems to LOWTRAN's prediction capabilities for atmospheric transmittance. References 5 and 9 through 12 show the results of the validation of the LOWTRAN 6 code over near-horizontal paths at 35- to 50-foot sensor and source heights off the surface of the ocean. In each of these results, there is the LOWTRAN Code characteristic the "90-degree Elevation Angle Dip". Figure 51 (reference 9) shows an example of this "Dip" that lowers the predicted radiance levels as compared to the measured values. This "Dip" occurs regardless of the aerosol model used.

This "90-degree Elevation Angle Dip" can be easily explained, given the default imaging geometries incorporated by LOWTRAN. The LOWTRAN code was developed by the Air Force Geophysical Laboratories to predict upwelling and downwelling transmittance values in the visible and infrared wavebands under various atmospheric and meteorological conditions. This default imaging geometry defines the elevation angle used in LOWTRAN; such, that 0-degree is zenith (straight-up) and 90-degrees is a horizontal path. Using these initial sensor and source geometries, LOWTRAN calculates the true refracted optical pathlength to solve for the final range value used with LOWTRAN's tabled atmospheric extinction coefficients (located in look-up tables). These default imaging geometries are such, that this refracted range calculation goes as one over the sine of the elevation angle. At an elevation angle of 90-degrees, this singularity causes LOWTRAN to error out, and the code uses a default layering profile so that the resulting elevation angle is not 90-degrees. Figure 51 also shows how this effect is reduced by multi-layering the radiosonde data inputs more closely to the ocean surface, for example, by increasing the number of LOWTRAN atmospheric profiles (plane-parallel layers) in the first kilometer of altitude. Reference 11 discusses this effect further and verifies that the application of more radiosonde layers, closer to the ocean surface, allows LOWTRAN to better calculate the true refracted optical path; for example, more accurate layering of the profiles allows for more accurate selection of the refractive index profiles to be used. Wollenweber (reference 11) goes beyond this description and attempts to correct the LOWTRAN code by removing the default selection routine. His modified version of LOWTRAN 6 resides at NCCOSC RDT&E Division—San Diego; it requires multiple layering of the first-kilometer-of-altitude to see significant correction to the existing LOWTRAN codes.

The APA analysis did not use this modified version of LOWTRAN 6 for two reasons. First, the APA experiment did not have access to radiosonde equipment other than the APA Experiment 3 ground measurements provide by the weather stations. In subsequent APA deployments, it is recommended that radiosonde launches be performed simultaneously with the APA transmittance measurements so that the evaluation of the modified LOWTRAN 6 code can be completed. The APA analysis used radiosonde data as gathered by the Naval Oceanography Command Detachment—Asheville (NOCD), which gathers radiosonde data at least twice a day at over 400 locations throughout the world.

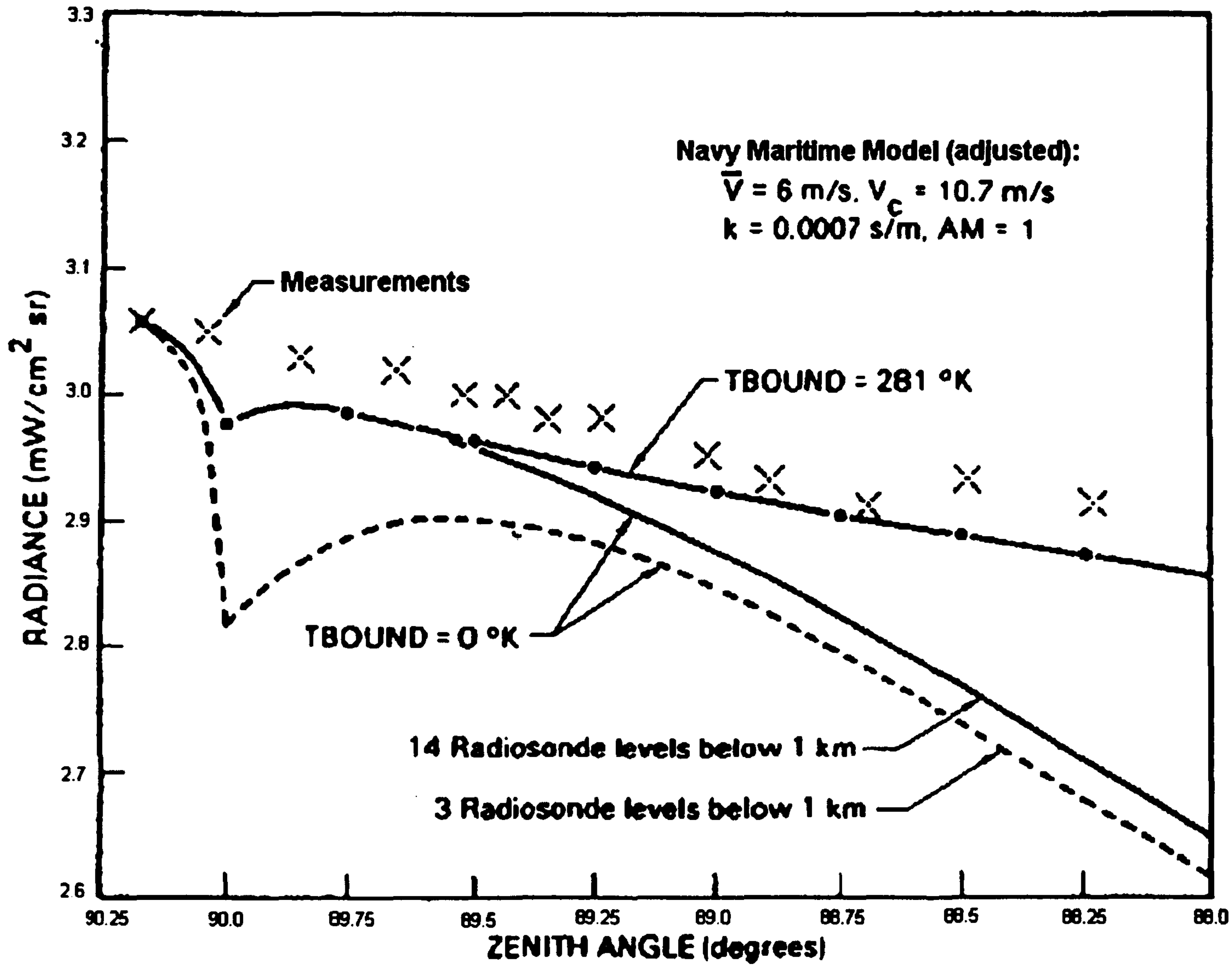


Figure 51. Comparison of measured and calculated IR sky radiances versus zenith angle for scattered cloud conditions and different atmospheric layering (1645 PST).

The data, that the APA TSCA was based upon, is the generally accepted source of current and historical (over one hundred years of meteorological records) meteorological data for establishing conditions throughout the world. Given the consistency of this historical database, it is an excellent source for normal radiosonde inputs to LOWTRAN. The NOCD radiosonde data are standard radiosonde runs and the normal 5 to 7 layers are provided in the first kilometer of altitude. Wollenweber's modified version of LOWTRAN 6 requires in excess of 12 layers in the first kilometer to see a significant difference in the predictions.

The other reason that the APA analysis did not use the Wollenweber modified version was that it was desired to validate both commonly available off-the-shelf personal computer versions of LOWTRAN 6 and LOWTRAN 7 with the actual APA transmittance measurements. The APA analysis evaluated both versions of this LOWTRAN code to verify that the "90-degree elevation angle Dip" problem was corrected in LOWTRAN 7. As performed by A. Ben-Shalom (reference 7), LOWTRAN 7 incorporated corrections to the code. Parts of these corrections dealt with the "90-degree elevation angle Dip" problem. Discussions with Hughes and Wollenweber suggested that this might not be true.

Figures 52 and 53 show examples of a comparison of the LOWTRAN 6 and LOWTRAN 7 transmittance predictions for the APA data taken in Adak, Alaska on 20 February 1992. In both cases, the Navy Maritime Model and the No Aerosol Model, only slight differences occur between the two different versions over the two infrared wavebands. Since these differences go positive and negative, with no visible consistency throughout the entire database checked, it was decided to look at the magnitude of this difference.

Figure 54 shows the case of the No Aerosol Model. The magnitude of the difference between the codes is only an average of 2.9% in the 3.4- to 4.2-micron range; an average of 1.5% in the 4.4- to 4.9-micron range; an average difference of 1.0% in the 7.8- to 14-micron range. Figure 55 shows the case of the Navy Maritime Model. These differences are slightly larger; for example, an average of 4.2% in the 3.4- to 4.2-micron range, an average of 3.8% in the 4.4- to 4.9-micron range, and an average difference of 4.9% in the 7.8- to 14-micron range.

The examples, shown in figures 52 to 55, are very similar to the results found in all the APA comparisons of the two LOWTRAN codes. It can be assumed that the comparisons of the LOWTRAN 6 versus LOWTRAN 7 data for all the APA data (Adak, 20 through 27 February 1992, and Pensacola, 20 through 28 September 1992) are very much the same as those shown in figures 52 to 55. In both the Adak and the Pensacola data, the No Aerosol Model showed differences as much as 3% off while the magnitude of the difference in all the Aerosol Models used showed as much as a 5% difference. The Navy Maritime Model always showed the greatest difference at this 5% value. It should be noted that figures 54 and 55 show the magnitude of this difference; for example, the absolute value of the difference between the LOWTRAN 6 and LOWTRAN 7 predictions shown in figures 52 and 53.

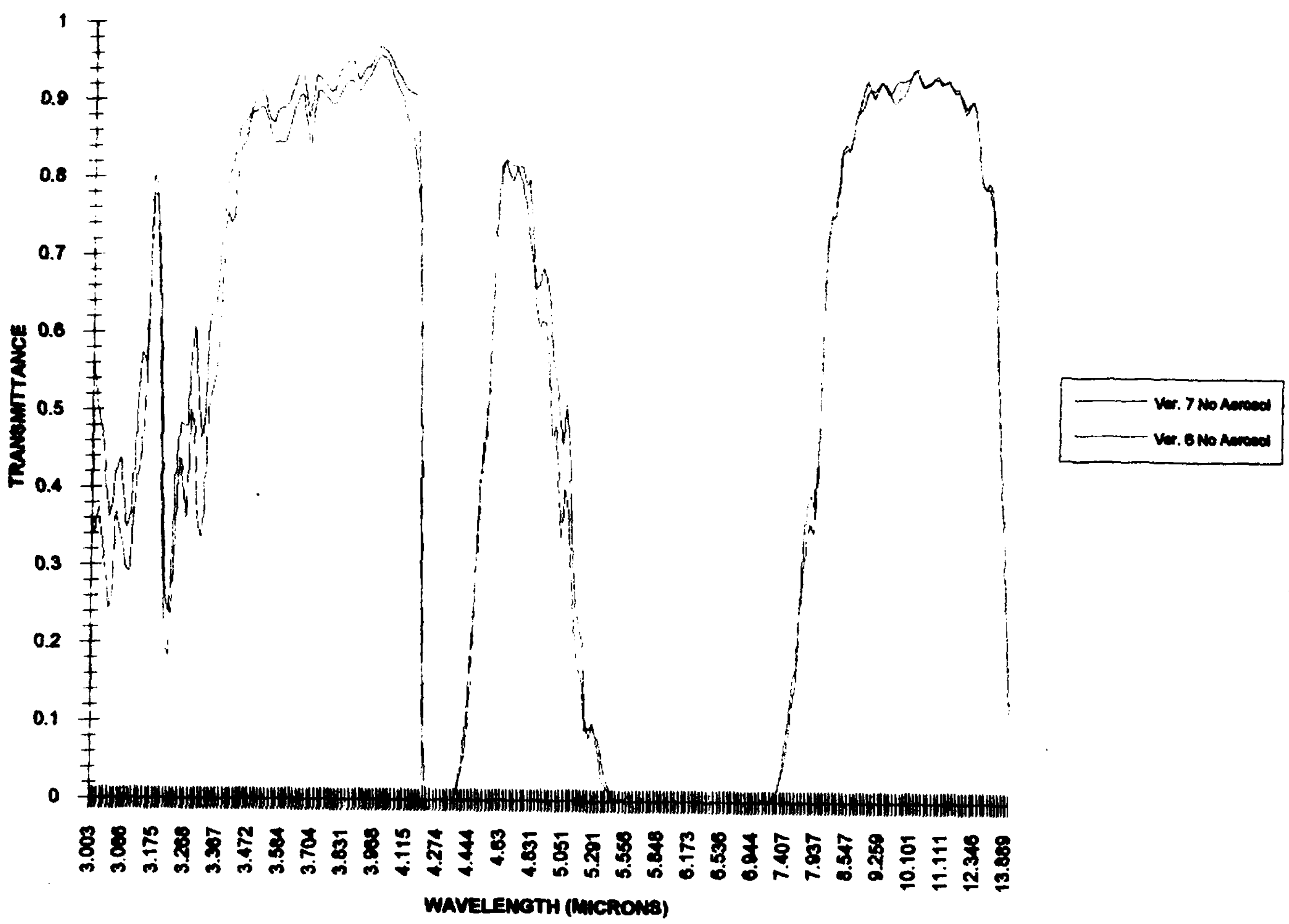


Figure 52. LOWTRAN: comparison of version 6 and 7 no aerosol model (Adak, AK on 2/20/92).

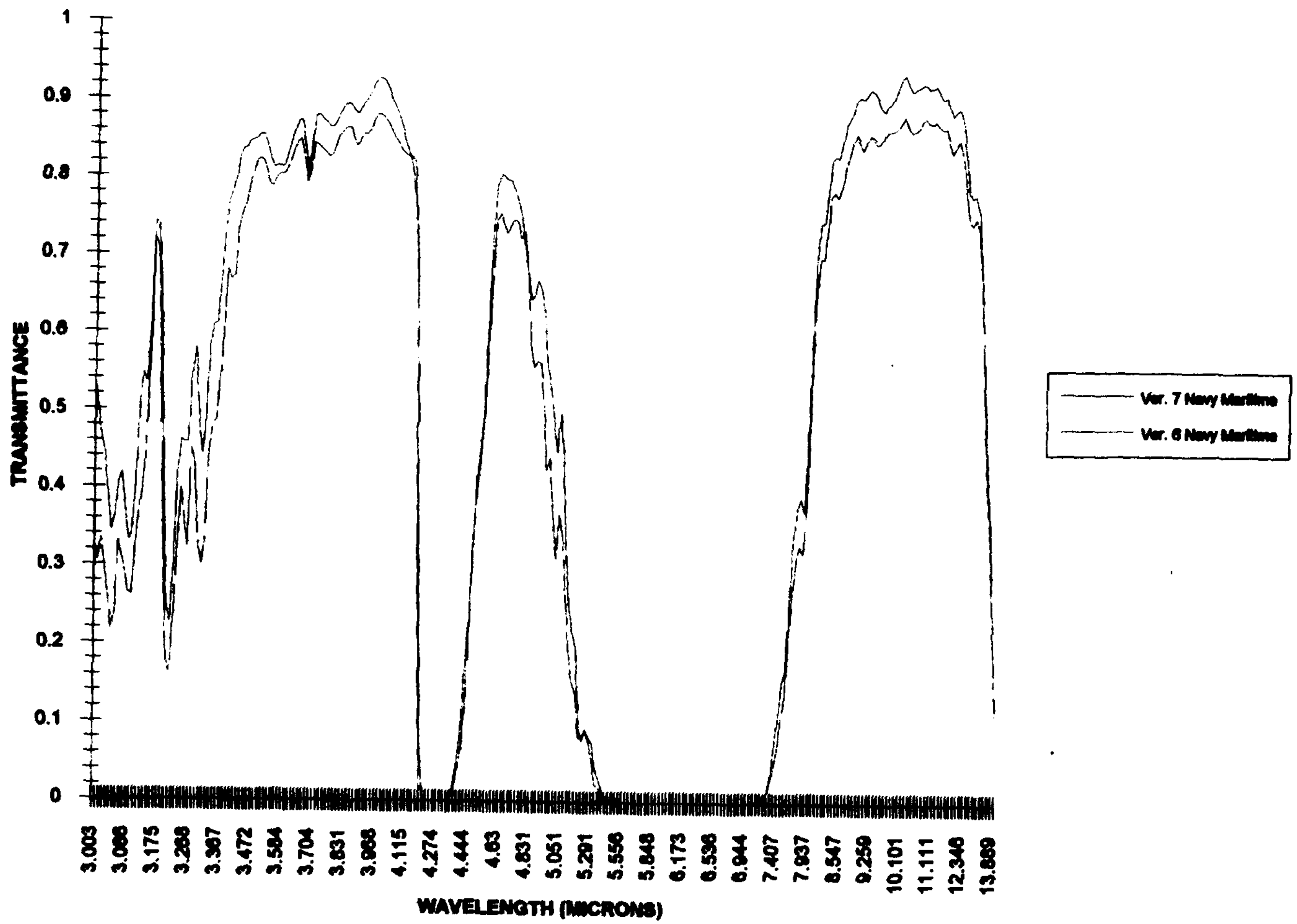


Figure 53. LOWTRAN: comparison of version 6 and 7 with Navy maritime model (Adak, AK on 2/20/92).

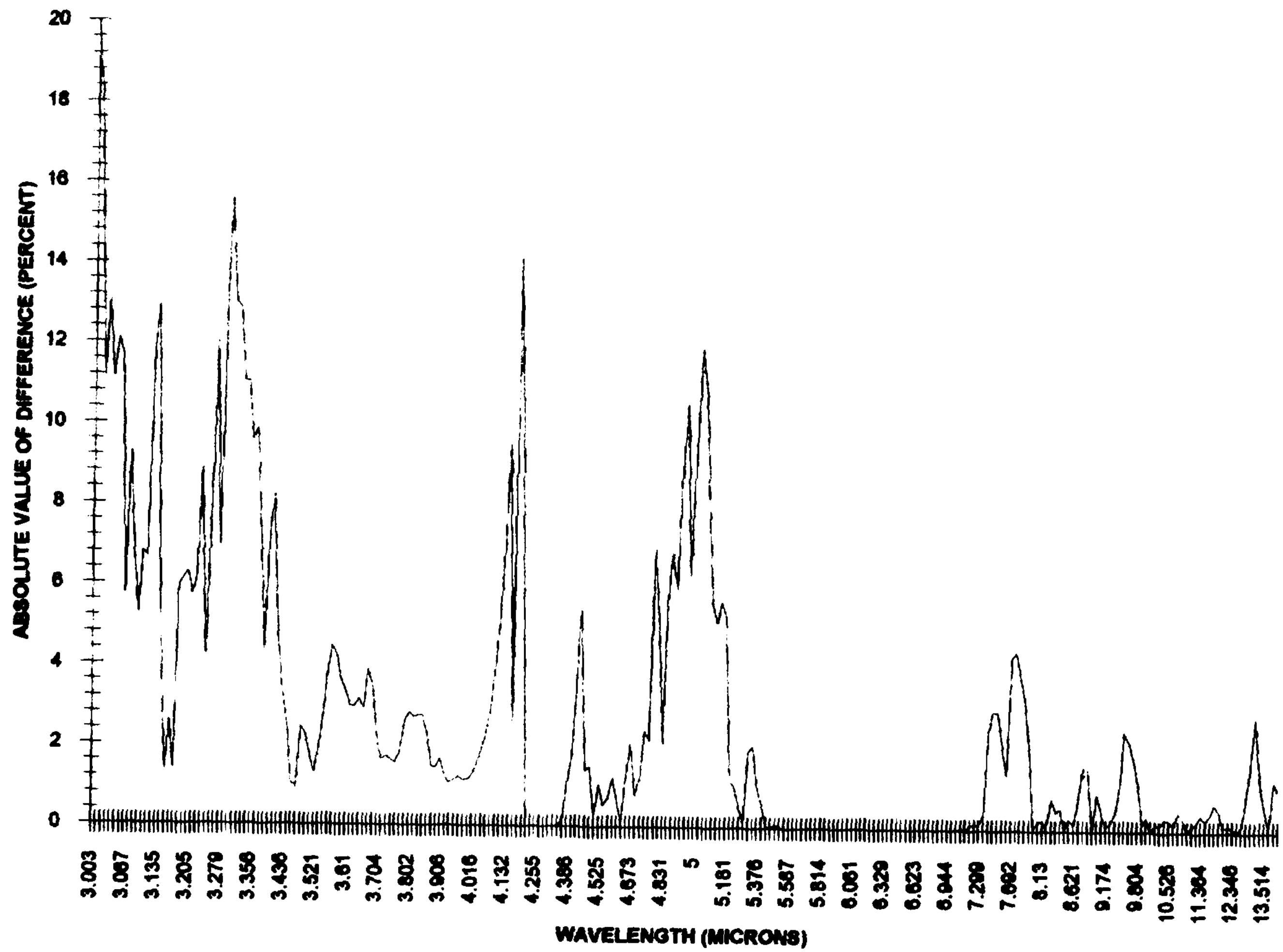


Figure 54. Difference between LOWTRAN 6 and 7 with no aerosol model (Adak, AK on 2/20/92).

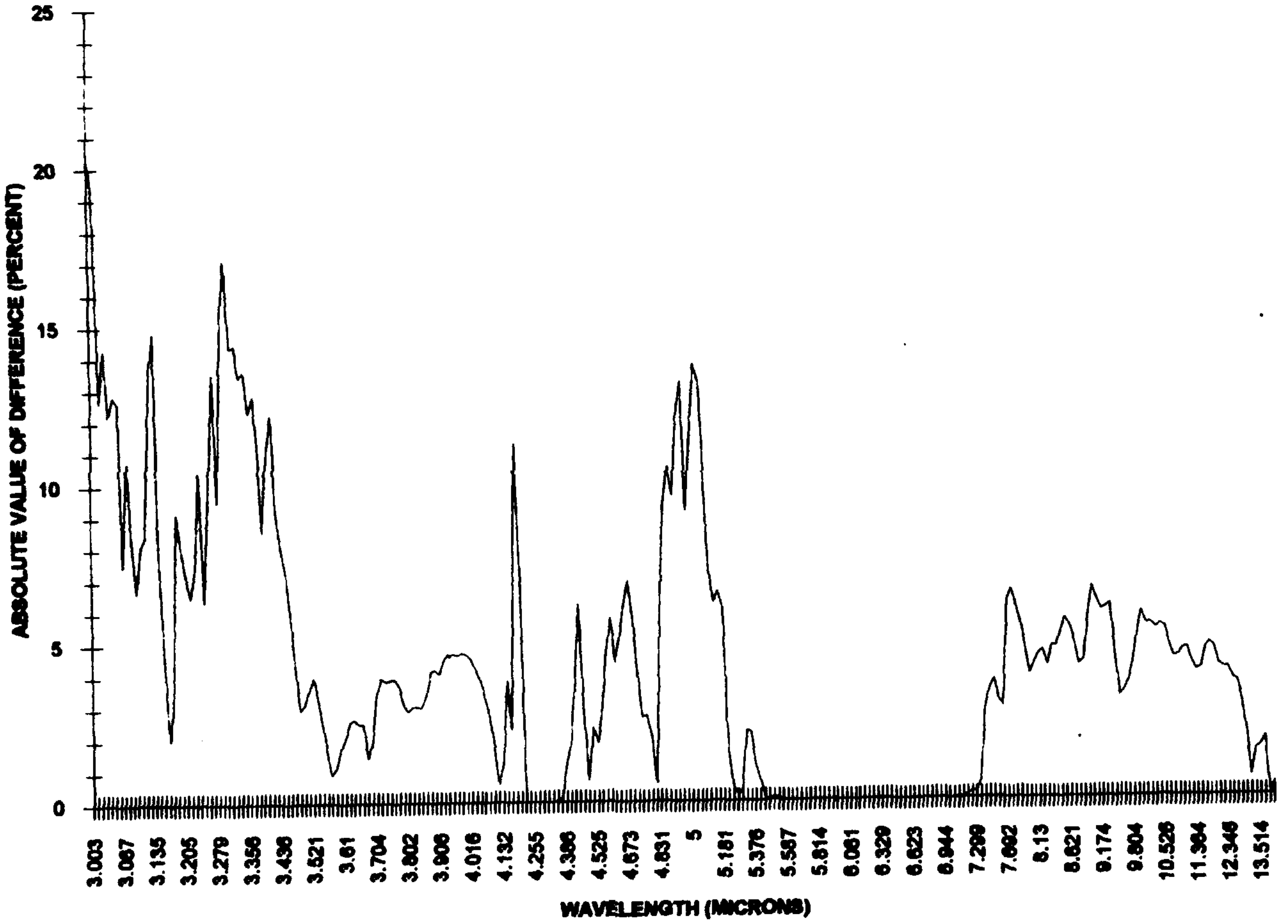


Figure 55. Difference between LOWTRAN 6 and 7 with Navy maritime model (Adak, AK on 2/20/92).

Given the worse case scenario of the Navy Maritime Aerosol Model, the average difference between these two LOWTRAN versions is only 5%, at least for these specific APA imaging geometries and radiosonde data inputs; thus, it was decided to simplify the APA analysis of the validation of these two LOWTRAN versions and compare the prediction results of the LOWTRAN 7 code with the randomly selected APA transmittance measurements. As a final note to this LOWTRAN 6 versus LOWTRAN 7 comparison analysis, it can be seen that, given these slight differences observed by comparison, the Ben-Shalom corrections in LOWTRAN 7 do not have a great effect given these APA specific imaging geometries.

The validation of the LOWTRAN 7 predictions compared with the many APA transmittance measurements is shown in figures 56 to 65. Appendix B shows the NOCD provided Radiosonde data for all the APA deployment days in Adak, Alaska and Pensacola, Florida. In Appendix C, an example of the LOWTRAN 7 data input and output files are shown. The selected example represents the data taken on 20 February 1992 in Adak. The entire radiosonde database is provided in this appendix so that analysts can perform their own analysis of this APA data. For the APA LOWTRAN comparison analysis, all the different LOWTRAN 7 aerosol models are included with the hope that one model will stand out as better than the others.

Table 4 contains a summary chart of the sensor imaging geometries at APA deployment sites. The range values cited in this table result from the measurements of all the various APA optical paths as measured with a laser rangefinder (wavelength = 1.52 microns; range measurement error = ±5 meters). The cited zenith angles are computed with the assumption that there is no refraction. These values are used as starting points for the LOWTRAN data inputs. Since LOWTRAN computes the true refracted optical path, LOWTRAN must be run with various elevation angles, so that the LOWTRAN calculated range matches that of the measured range of the laser rangefinders. From figures 56 through 65, the comparison between the LOWTRAN predictions and the actual data obtained in APA Transmittance Measurements (for three different wavelengths in these two infrared wavelength bands) are computed and the differences contained in corresponding tables 5 through 14, respectively.

The conclusions from the comparison analysis of APA LOWTRAN 7 are not surprising, in that LOWTRAN's predictions are as good as the data input into the code. The special near-horizontal path geometries required by the APA experiments cause problems to LOWTRAN. The APA Adak data comparisons all show that LOWTRAN does a very good job in the prediction of the atmospheric transmittance values when the measured APA transmittance values in both infrared wavebands were relatively high; for example,

Table 4. APA deployment site's sensor imaging geometries.

Site/Date	Spectroradiometer Sensor Height	36-inch Collimator Sensor Height	Range:	Zenith Angle:
Adak				
2/20/92	2 m	5 m	1160 m	89.9 deg
2/21/92	2 m	5 m	1160 m	89.9 deg
2/22/92	2 m	5 m	1160 m	89.9 deg
2/23/92	2 m	5 m	1160 m	89.9 deg
2/24/92	2 m	5 m	1160 m	89.9 deg
2/25/92	2 m	5 m	1160 m	89.9 deg
2/26/92 (C Run)	2 m	5 m	1160 m	89.9 deg
2/27/92	2 m	5 m	1160 m	89.9 deg
MRT Runs	2 m	1 m	665 m	—
Pensacola				
9/20/92 (C Run)	2 m	2 m	825 m	90.0 deg
9/21/92	1 m	3 m	1685 m	89.93 deg
9/22/92	1 m	3 m	1685 m	89.93 deg
9/23/92	1 m	3 m	1685 m	89.93 deg
9/26/92	3 m	3 m	1715 m	90.0 deg
9/27/92	3 m	3 m	2190 m	90.0 deg
9/28/92	3 m	3 m	2190 m	90.0 deg
MRT Runs	2 m	2 m	840 m	—

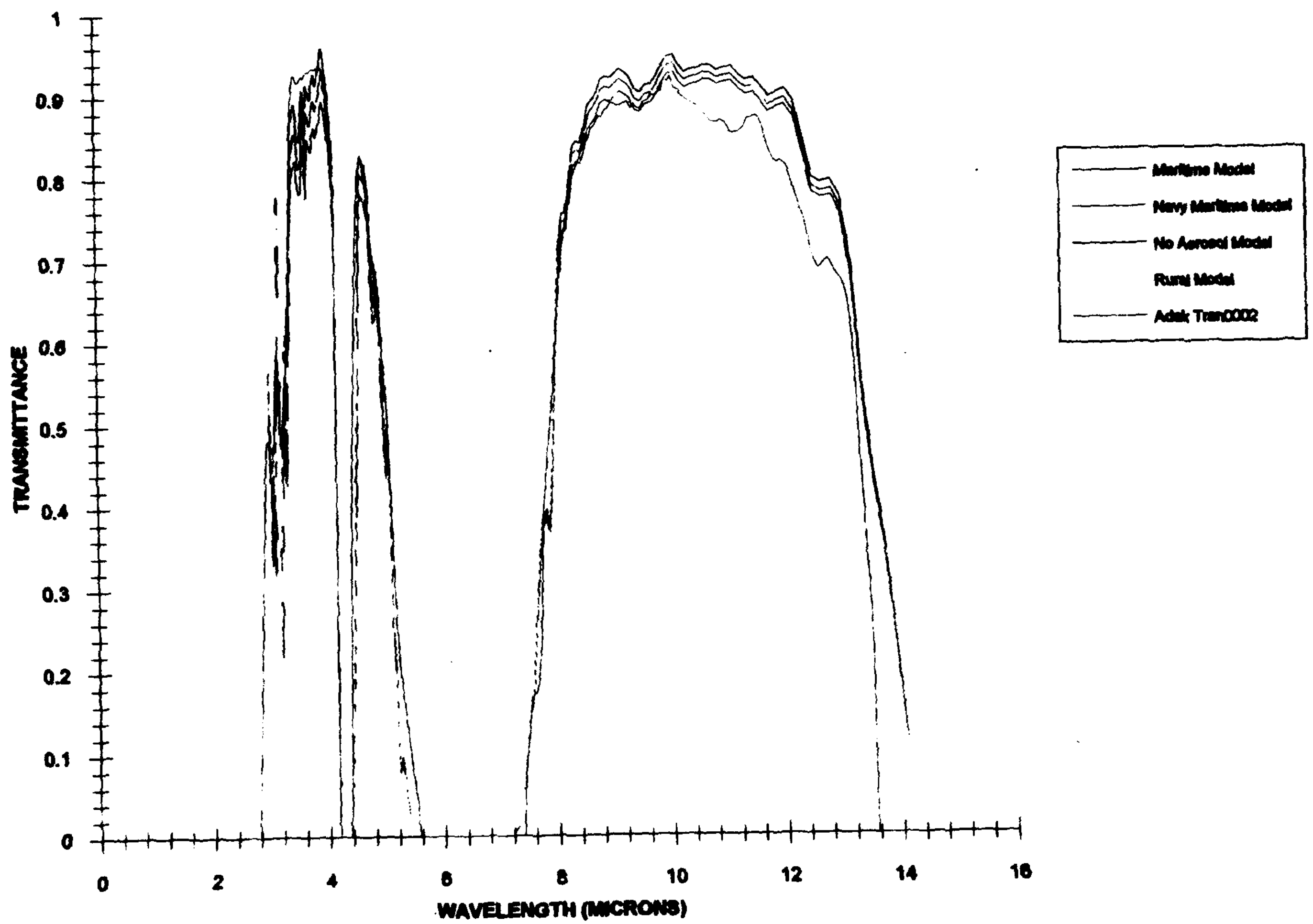


Figure 56. Comparison of LOWTRAN 7 models and actual data (Adak, AK on 2/20/92).

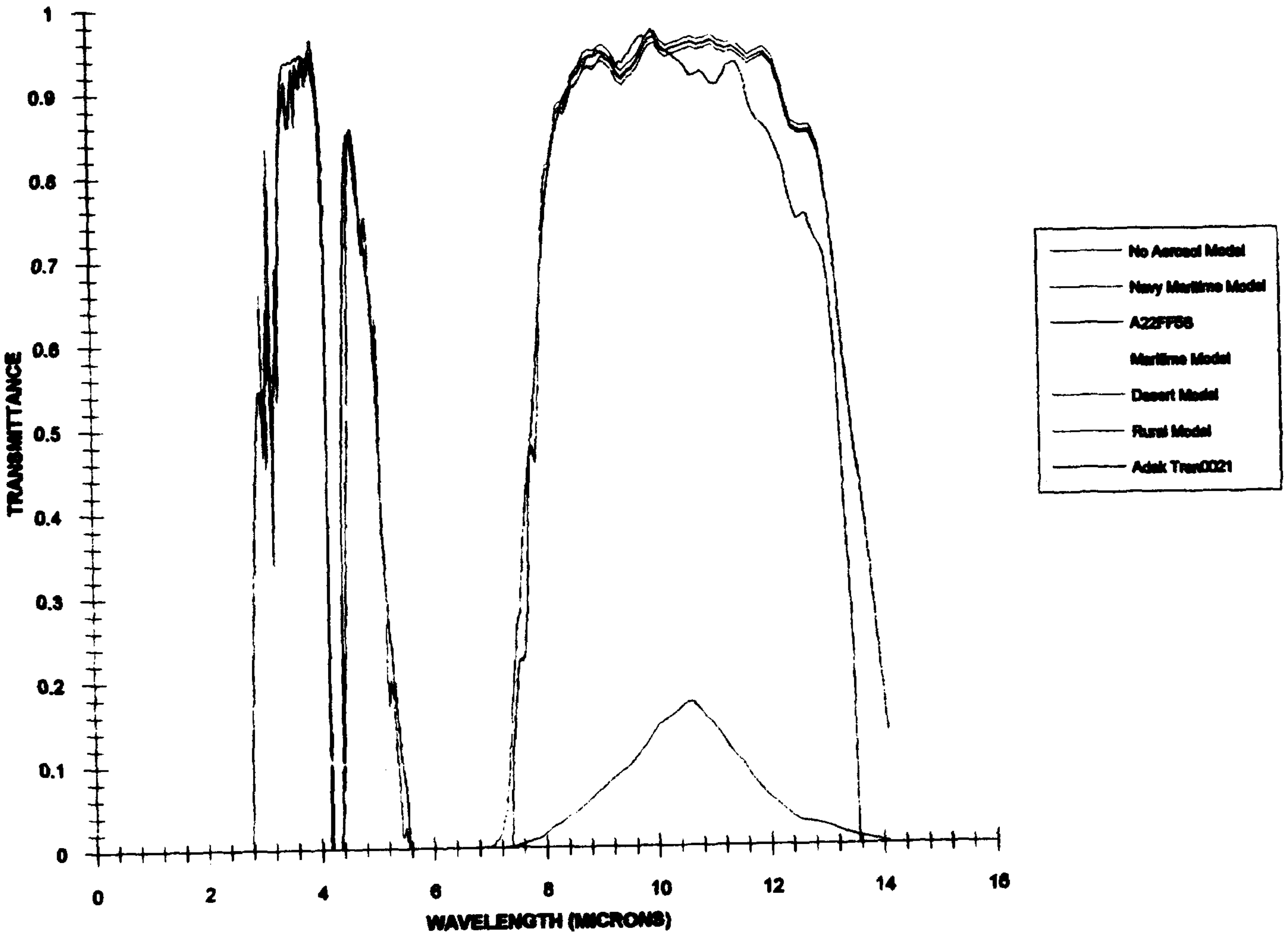


Figure 57. Comparison of LOWTRAN 7 models and actual data (Adak, AK on 2/22/92).

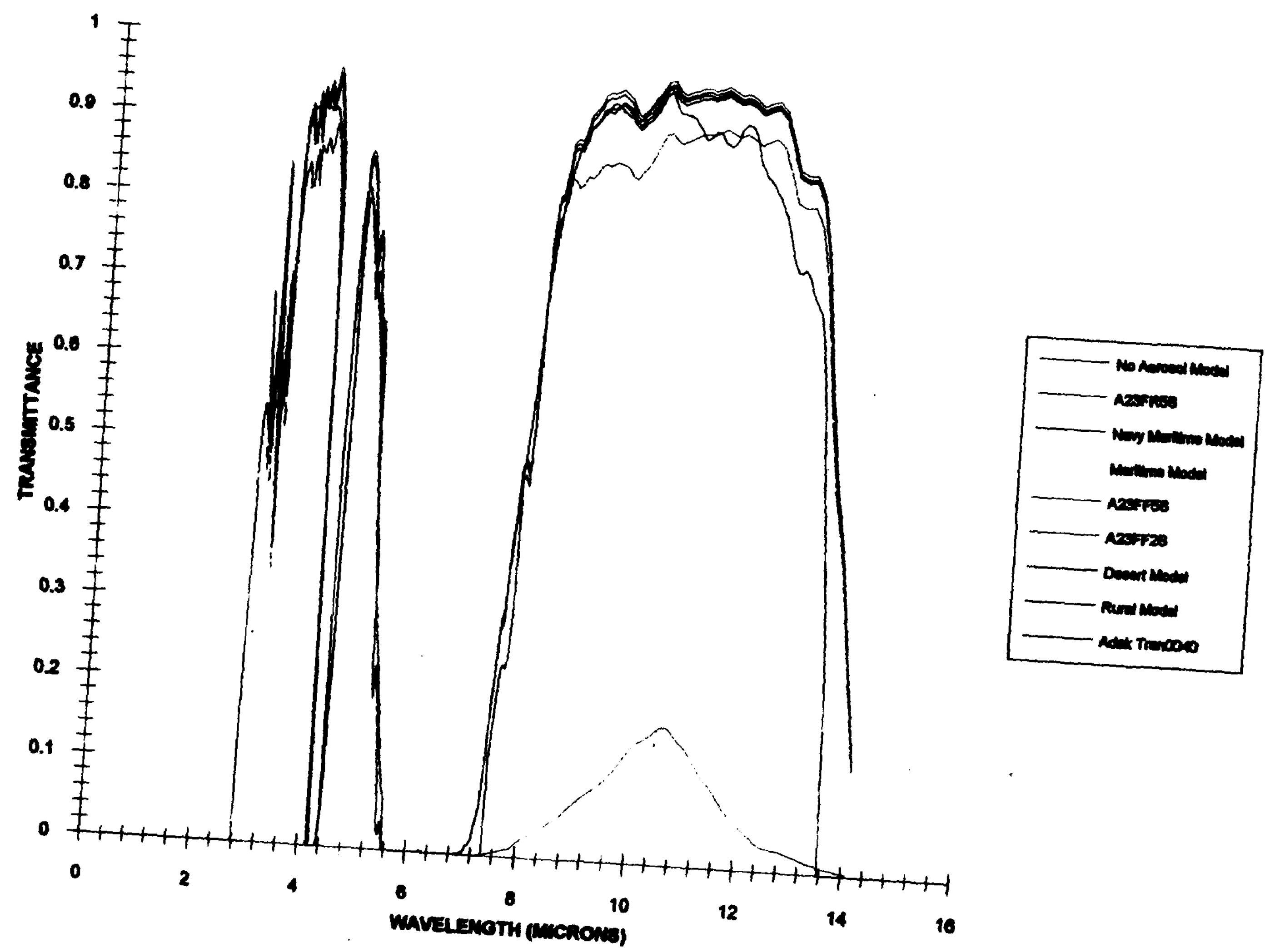


Figure 58. Comparison of LOWTRAN 7 models and actual data (Adak, AK on 2/22/92).

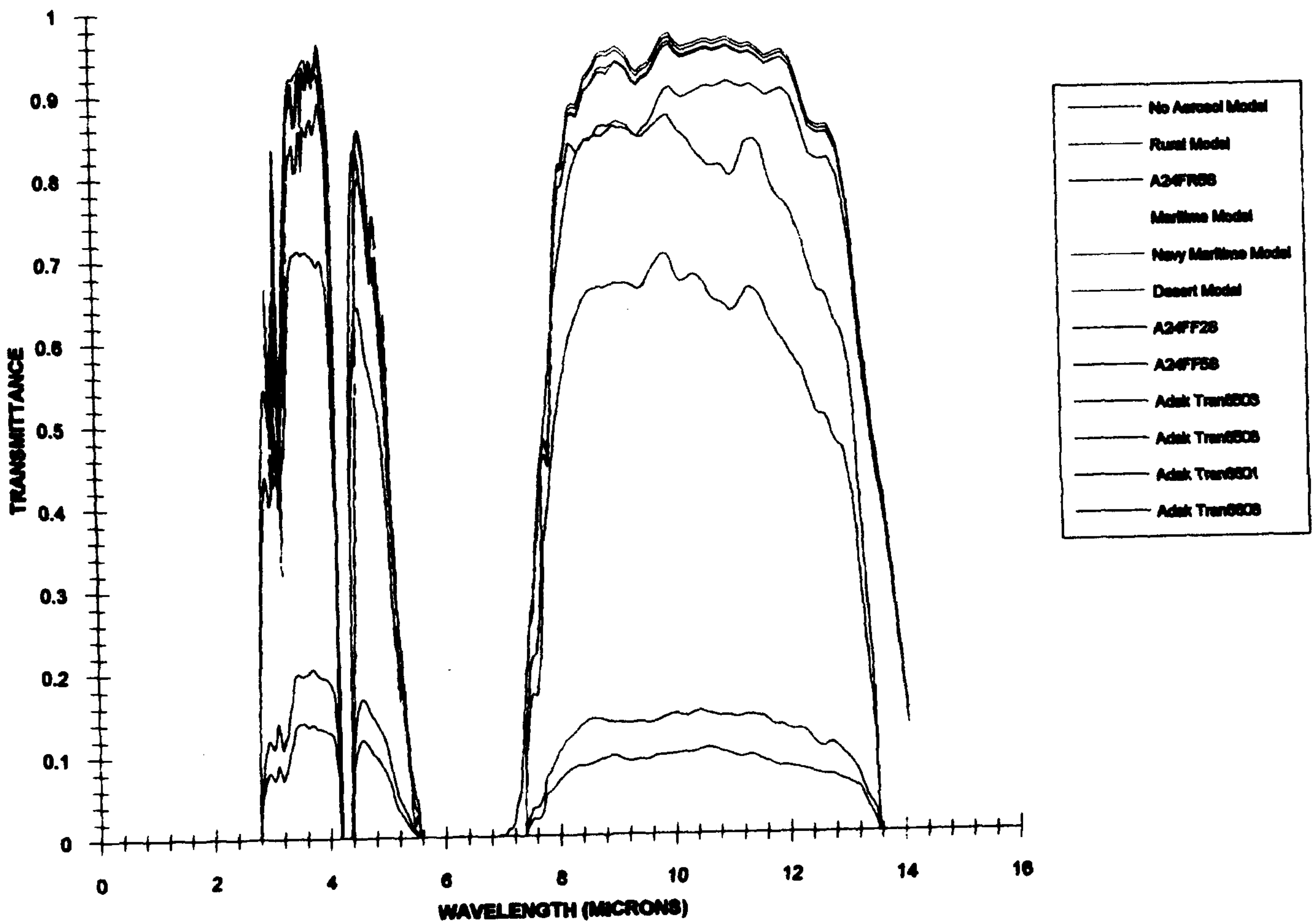


Figure 59. Comparison of LOWTRAN 7 models and actual data (Adak, AK on 2/24/92).

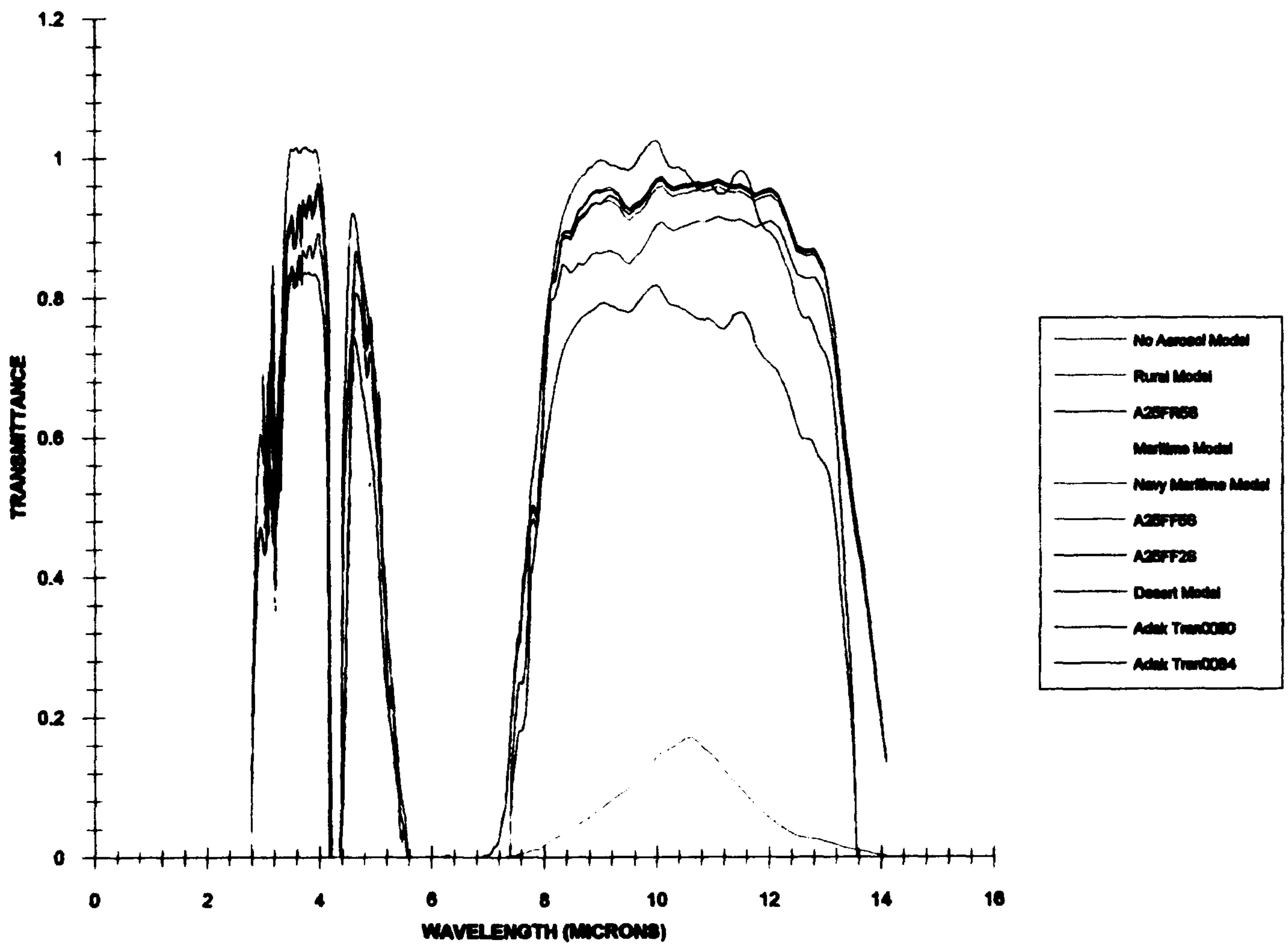


Figure 60. Comparison of LOWTRAN 7 models and actual data (Adak, AK on 2/25/92).

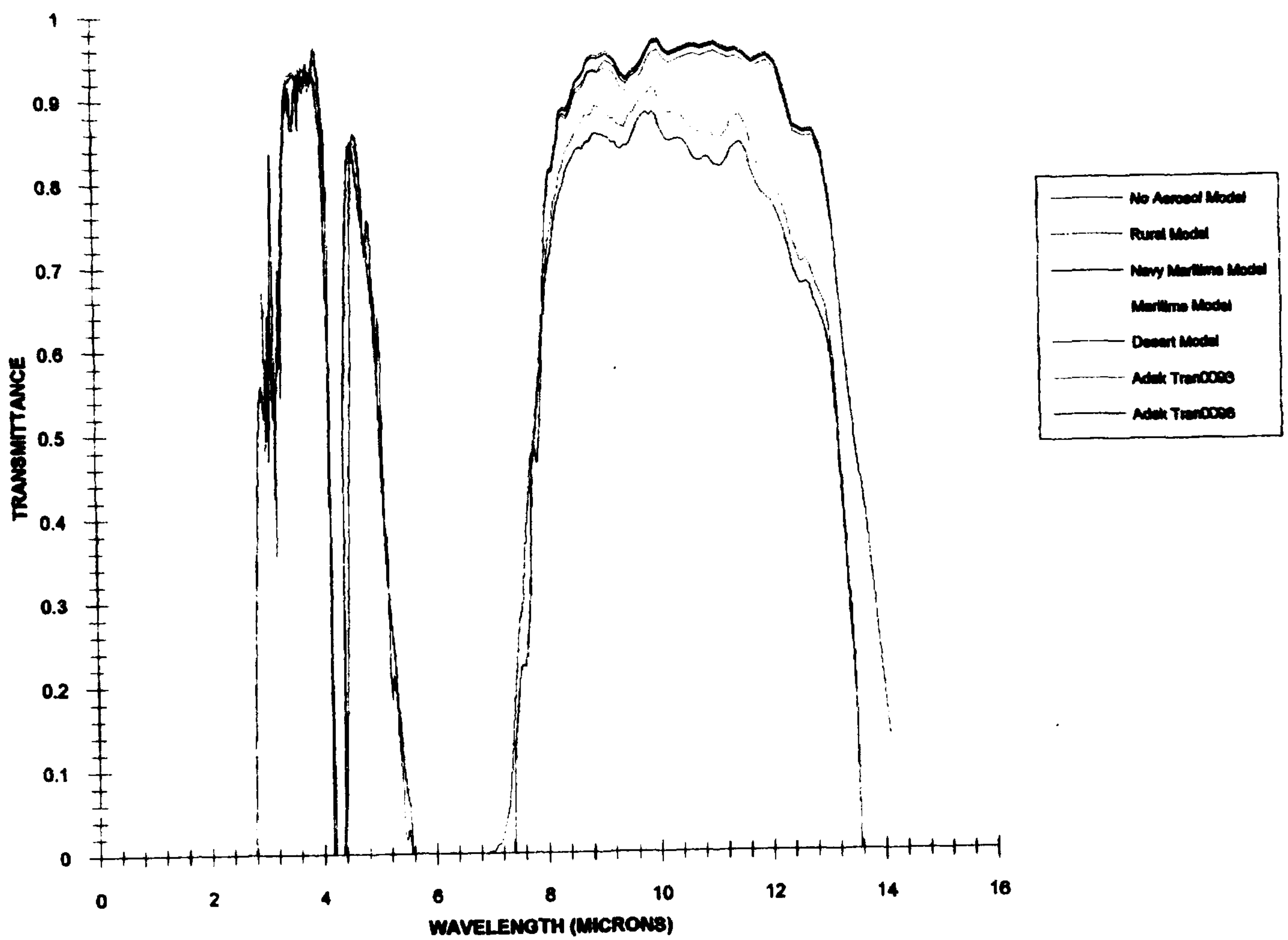


Figure 61. Comparison of LOWTRAN 7 models and actual data (Adak, AK on 2/27/92).

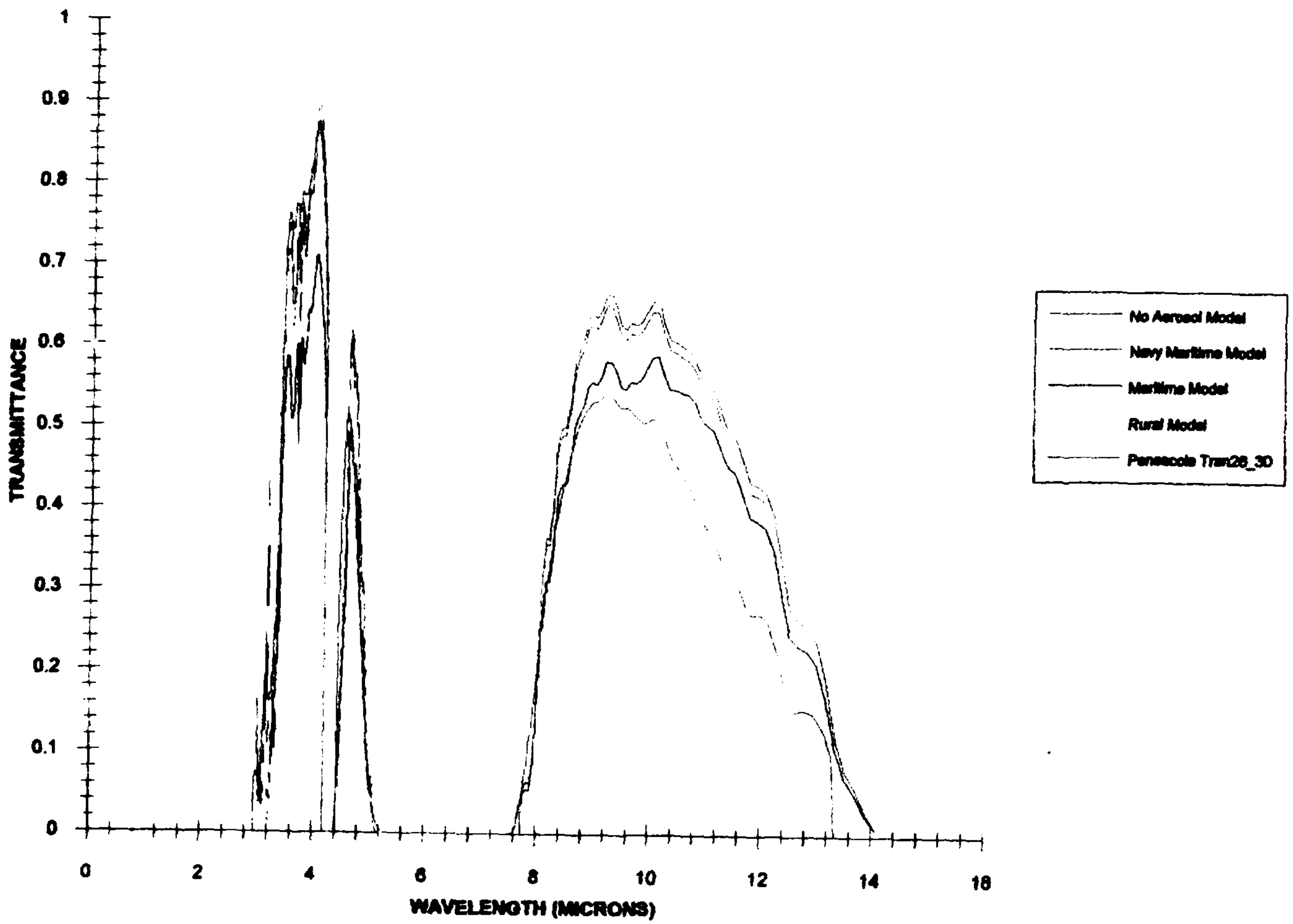


Figure 62. Comparison of LOWTRAN 7 models and actual data (Pensacola, FL on 9/22/92).

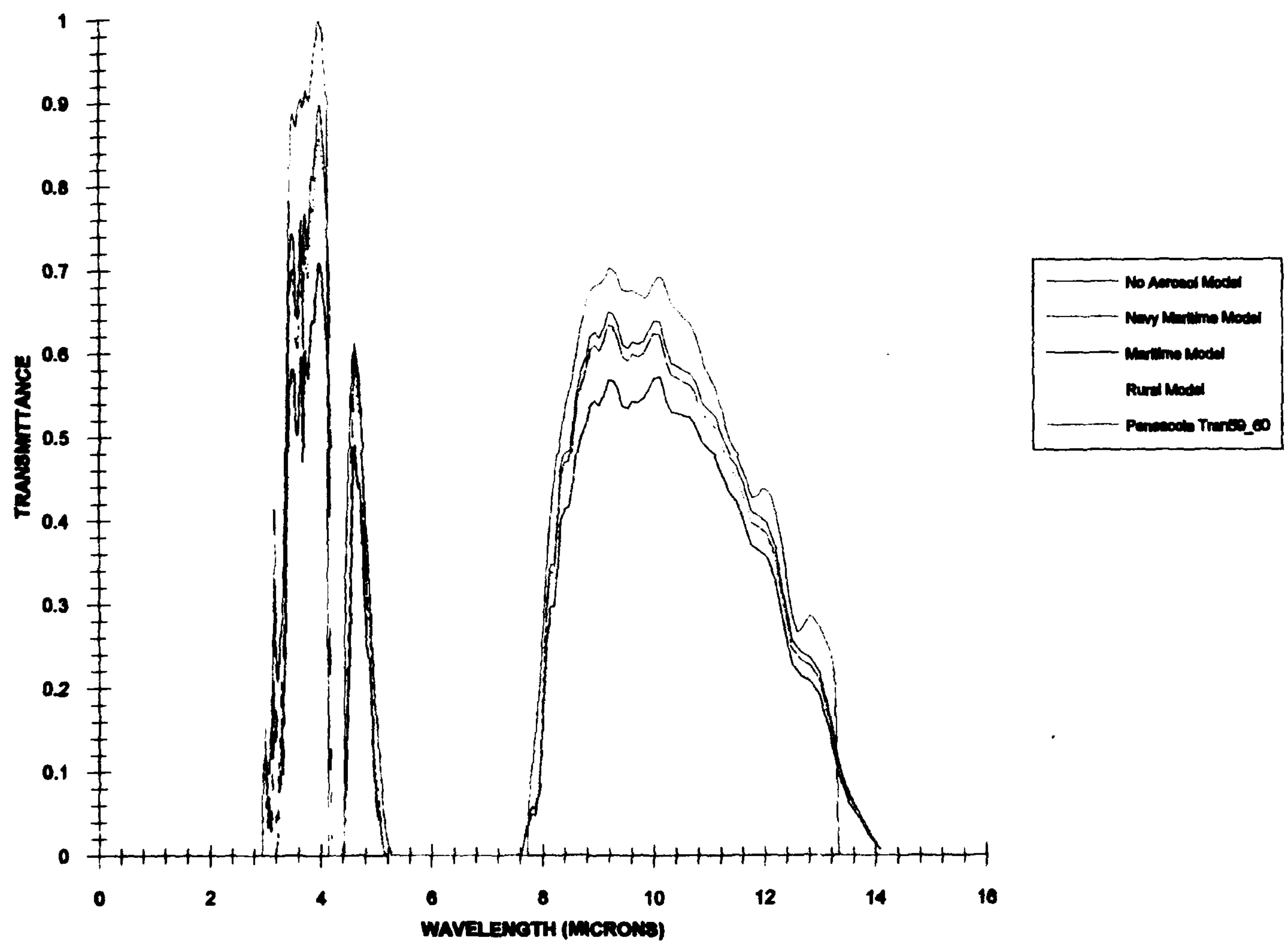


Figure 63. Comparison of LOWTRAN 7 models and actual data (Pensacola, FL on 9/23/92).

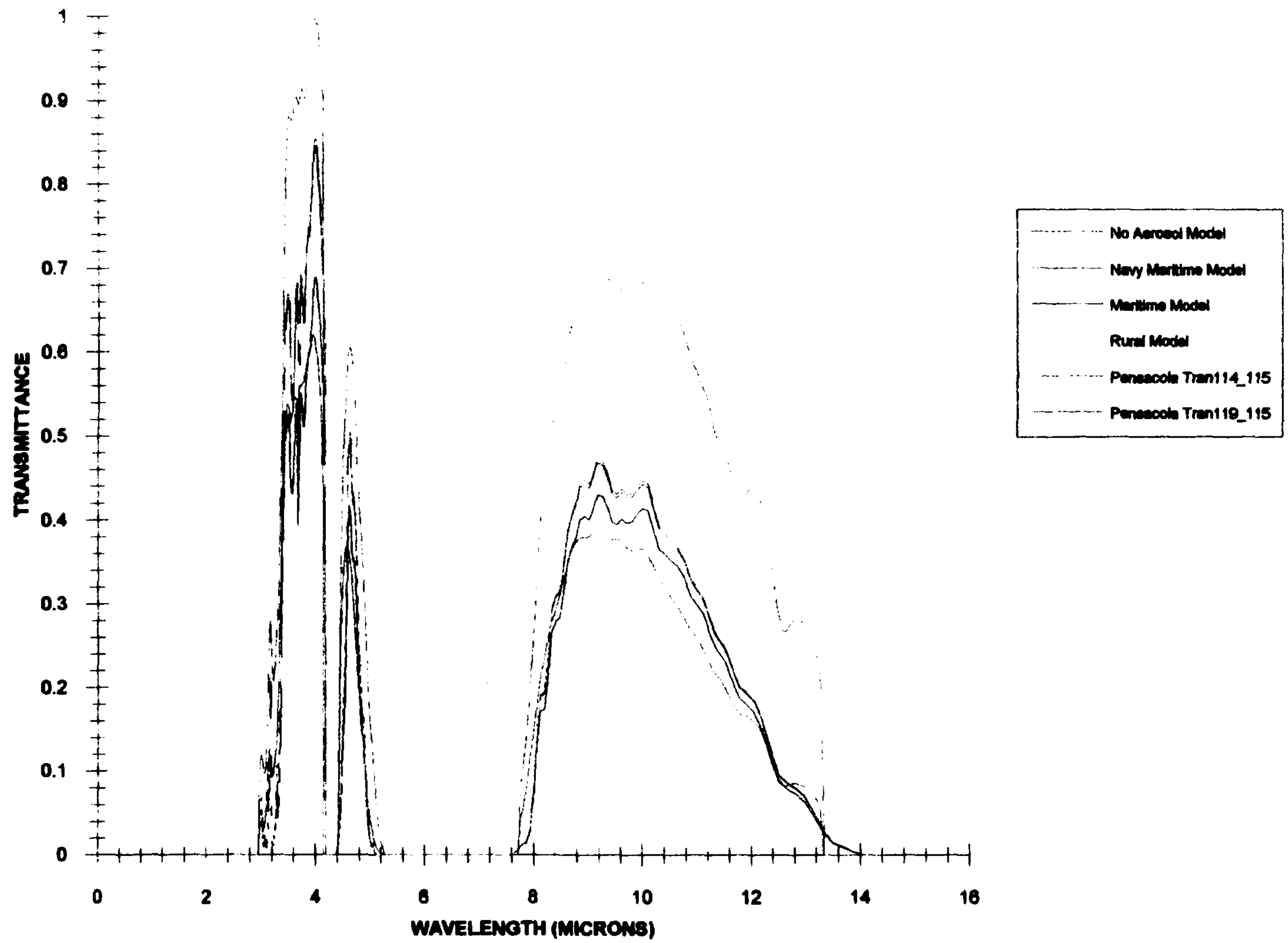


Figure 64. Comparison of LOWTRAN 7 models and actual data (Pensacola, FL on 9/27/92).

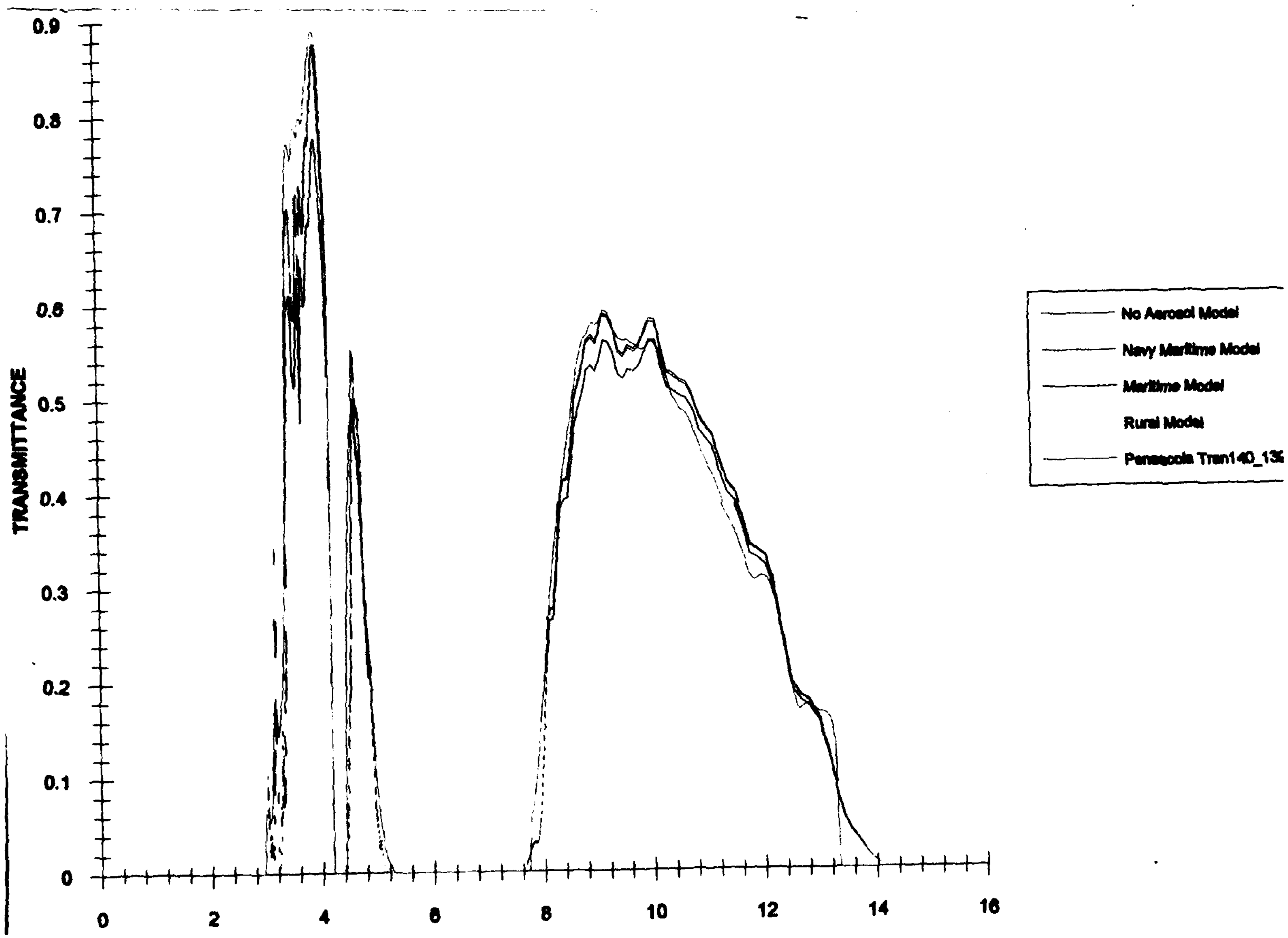


Figure 65. Comparison of LOWTRAN 7 models and actual data (Pensacola, FL on 9/28/92).

Table 5. Differences between LOWTRAN and actual data, Adak, AK (2/20/92).

From figure 56, the differences computed between the LOWTRAN predictions and The APA Transmittance Measurements (for three different wavelengths in these two infrared wavelength bands) are contained herein.

Condition:	Site:	S_H:	R_H:	Range
Clear Day	Adak - 20 Feb 92	2 m	5 m	1160 m

Zenith:	T:	REL_H:	P:	V_{ws}:	P_H:
89.9 deg	3.4°C	71.3%	1010 mb	9 kn	4.7 mm/km

No Aerosol:	3.8 microns: 1%	4.7 microns: −3%	10.5 microns: −5%
Navy Maritime:	3.8 microns: 5%	4.7 microns: 0%	10.5 microns: −4%
Maritime:	3.8 microns: 8%	4.7 microns: 2%	10.5 microns: −3%
Rural:	3.8 microns: 3%	4.7 microns: −2%	10.5 microns: −4%
Rural (5km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Desert:	3.8 microns: —	4.7 microns: —	10.5 microns: —
Fog (0.5km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Fog (0.2km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Tran0002:	3.8 microns: 93%	4.7 microns: 79%	10.5 microns: 89%
Tran:	3.8 microns: —	4.7 microns: —	10.5 microns: —
Tran:	3.8 microns: —	4.7 microns: —	10.5 microns: —

Table 6. Differences between LOWTRAN and actual data, Adak, AK (2/22/92).

From figure 57, we find the differences computed between the LOWTRAN predictions and the APA transmittance measurements (for three different wavelengths in these two infrared wavelength bands) are contained herein.

Condition:	Site:	S_H:	R_H:	Range
Clear Day	Adak - 22 Feb 92	2 m	5 m	1160 m

Zenith:	T:	REL_H:	P:	V_{ws}:	P_H:
89.9 deg	0.°C	68.7%	1006 mb	12 kn	3.2 mm/km

No Aerosol:	3.8 microns: 2%	4.7 microns: -5%	10.5 microns: -2%
Navy Maritime:	3.8 microns: 3%	4.7 microns: -3%	10.5 microns: -1%
Maritime:	3.8 microns: 7%	4.7 microns: 1%	10.5 microns: 0%
Rural:	3.8 microns: 3%	4.7 microns: -3%	10.5 microns: 0%
Rural (5 km vis):	3.8 microns: --	4.7 microns: --	10.5 microns: --
Desert:	3.8 microns: 3%	4.7 microns: -4%	10.5 microns: -1%
Fog (0.5 km vis):	3.8 microns: 94%	4.7 microns: 82%	10.5 microns: 80%
Fog (0.2 km vis):	3.8 microns: --	4.7 microns: --	10.5 microns: --
Tran0021:	3.8 microns: 94%	4.7 microns: 82%	10.5 microns: 94%
Tran:	3.8 microns: --	4.7 microns: --	10.5 microns: --
Tran:	3.8 microns: --	4.7 microns: --	10.5 microns: --

Table 7. Differences between LOWTRAN and actual data, Adak, AK (2/23/92).

From figure 58, the differences computed between the LOWTRAN predictions and the APA transmittance measurements (for three different wavelengths in these two infrared wavelength bands) are contained herein.

Condition:	Site:	S_H:	R_H:	Range
Lt Snow	Adak - 23 Feb 92	2 m	5 m	1160 m

Zenith:	T:	REL_H:	P:	V_{ws}:	P_H:
89.9 deg	-0.9°C	58.5%	1008 mb	12 kn	2.8 mm/km

No Aerosol:	3.8 microns: -2%	4.7 microns: -7%	10.5 microns: -4%
Navy Maritime:	3.8 microns: 0%	4.7 microns: -5%	10.5 microns: -3%
Maritime:	3.8 microns: 3%	4.7 microns: -2%	10.5 microns: -2%
Rural:	3.8 microns: 0%	4.7 microns: -5%	10.5 microns: -2%
Rural (5 km vis):	3.8 microns: 5%	4.7 microns: 0%	10.5 microns: 2%
Desert:	3.8 microns: -1%	4.7 microns: -6%	10.5 microns: -3%
Fog (0.5 km vis):	3.8 microns: 91%	4.7 microns: 80%	10.5 microns: 17%
Fog (0.2 km vis):	3.8 microns: 91%	4.7 microns: 80%	10.5 microns: 92%
Tran0040:	3.8 microns: 91%	4.7 microns: 80%	10.5 microns: 92%
Tran:	3.8 microns: --	4.7 microns: --	10.5 microns: --
Tran:	3.8 microns: --	4.7 microns: --	10.5 microns: --

Table 8. Differences between LOWTRAN and actual data, Adak, AK (2/24/92).

From figure 59, the differences computed between the LOWTRAN predictions and the APA transmittance measurements (for three different wavelengths in these two infrared wavelength bands) are contained herein.

Condition:	Site:	S_H:	R_H:	Range
Mod. Snow	Adak - 24 Feb 92	2 m	5 m	1160 m
Heavy Snow				

Zenith:	T:	REL_H:	P:	V_{ws}:	P_H:
89.9 deg	-1.1°C	76.0%	1006 mb	6 kn	3.4 mm/km

No Aerosol:	3.8 microns:	4.7 microns:	10.5 microns:
	2%	-6%	-13%
Navy Maritime:	3.8 microns:	4.7 microns:	10.5 microns:
	2%	-5%	-12%
Maritime:	3.8 microns:	4.7 microns:	10.5 microns:
	8%	-1%	-11%
Rural:	3.8 microns:	4.7 microns:	10.5 microns:
	3%	-5%	-11%
Rural (5 km vis):	3.8 microns:	4.7 microns:	10.5 microns:
	9%	0%	-7%
Desert:	3.8 microns:	4.7 microns:	10.5 microns:
	3%	-5%	-11%
Fog (0.5 km vis):	3.8 microns:	4.7 microns:	10.5 microns:
	94%	80%	83%
Fog (0.2 km vis):	3.8 microns:	4.7 microns:	10.5 microns:
	94%	80%	83%
Tran6503:	3.8 microns:	4.7 microns:	10.5 microns:
Moderate Snow	94%	80%	83%
Tran6508:	3.8 microns:	4.7 microns:	10.5 microns:
Heavy Snow	71%	60%	83%
Tran6601:	3.8 microns:	4.7 microns:	10.5 microns:
Heavy Snow	14%	11%	10%
Tran6608:	3.8 microns:	4.7 microns:	10.5 microns:
Moderate Snow	20%	16%	15%

Table 9. Differences between LOWTRAN and actual data, Adak, AK (2/25/92).

From figure 60, the differences computed between the LOWTRAN predictions and the APA transmittance measurements (for three different wavelengths in these two infrared wavelength bands) are contained herein.

Condition:	Site:	S_H:	R_H:	Range
Lt Snow	Adak - 25 Feb 92	2 m	5 m	1160 m

Zenith:	T:	REL_H:	P:	V_{ws}:	P_H:
89.9 deg	-1.1°C	64.4%	1009 mb	7.5 kn	2.7 mm/km

No Aerosol:	3.8 microns: 8%	4.7 microns: 4%	10.5 microns: 2%
Navy Maritime:	3.8 microns: 8%	4.7 microns: 4%	10.5 microns: 2%
Maritime:	3.8 microns: 15%	4.7 microns: 7%	10.5 microns: 3%
Rural:	3.8 microns: 9%	4.7 microns: 5%	10.5 microns: 3%
Rural (5 km vis):	3.8 microns: 16%	4.7 microns: 10%	10.5 microns: 8%
Desert:	3.8 microns: 8%	4.7 microns: 4%	10.5 microns: 2%
Fog (0.5 km vis):	3.8 microns: 100%	4.7 microns: 90%	10.5 microns: 81%
Fog (0.2 km vis):	3.8 microns: 100%	4.7 microns: 90%	10.5 microns: 98%
*Tran0080: Clear	3.8 microns: 100%	4.7 microns: 90%	10.5 microns: 98%
Tran0084: Light Snow	3.8 microns: 83%	4.7 microns: 72%	10.5 microns: 77%
Tran:	3.8 microns: --	4.7 microns: --	10.5 microns: --

Table 10. Differences between LOWTRAN and actual data, Adak, AK (2/27/92).

From figure 61, the differences computed between the LOWTRAN predictions and the APA transmittance measurements (for three different wavelengths in these two infrared wavelength bands) are contained herein.

Condition:	Site:		S_H:	R_H:	Range
Clear Day	Adak - 27 Feb 92		2 m	5 m	1160 m
Zenith:	T:	REL_H:	P:	V_{ws}:	P_H:
89.9 deg	-00.3°C	56.7%	1007 mb	9.9 kn	2.7 mm/km

No Aerosol:	3.8 microns: 3%	4.7 microns: -6%	10.5 microns: -8%
Navy Maritime:	3.8 microns: 3%	4.7 microns: -6%	10.5 microns: -8%
Maritime:	3.8 microns: 6%	4.7 microns: -2%	10.5 microns: -6%
Rural:	3.8 microns: 3%	4.7 microns: -5%	10.5 microns: -6%
Rural (5 km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Desert:	3.8 microns: 3%	4.7 microns: -6%	10.5 microns: -8%
Fog (0.5 km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Fog (0.2 km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
*Tran0093: Clear	3.8 microns: 93%	4.7 microns: 80%	10.5 microns: 88%
Tran0096: Clear	3.8 microns: 92%	4.7 microns: 80%	10.5 microns: 85%
Tran :	3.8 microns: —	4.7 microns: —	10.5 microns: —

Table 11. Differences between LOWTRAN and actual data, Pensacola, FL (9/22/92).

From figure 62, the differences computed between the LOWTRAN predictions and the APA transmittance measurements (for three different wavelengths in these two infrared wavelength bands) are contained herein.

Condition:	Site:	S_H:	R_H:	Range
High Humidity	Pensacola - 22 Sept 92	1 m	3 m	1685 m

Zenith:	T:	REL_H:	P:	V_{ws}:	P_H:
89.93 deg	28.3°C	77.5%	1014 mb	11.5 kn	23.3 mm/km

No Aerosol:	3.8 microns: 13%	4.7 microns: –14%	10.5 microns: –17%
Navy Maritime:	3.8 microns: 15%	4.7 microns: –13%	10.5 microns: –16%
Maritime:	3.8 microns: 29%	4.7 microns: –4%	10.5 microns: –10%
Rural:	3.8 microns: 15%	4.7 microns: –12%	10.5 microns: –15%
Rural (5 km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Desert:	3.8 microns: —	4.7 microns: —	10.5 microns: —
Fog (0.5 km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Fog (0.2 km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Tran26_30:	3.8 microns: 78%	4.7 microns: 42%	10.5 microns: 44%
Tran:	3.8 microns: —	4.7 microns: —	10.5 microns: —
Tran:	3.8 microns: —	4.7 microns: —	10.5 microns: —

Table 12. Differences between LOWTRAN and actual data, Pensacola, FL (9/23/92).

From figure 63, the differences computed between the LOWTRAN predictions and the APA transmittance measurements (for three different wavelengths in these two infrared wavelength bands) are contained herein.

Condition:	Site:	S_H:	R_H:	Range
High Humidity	Pensacola-23 Sept 92	1 m	3 m	1685 m

Zenith:	T:	REL_H:	P:	V_{ws}:	P_H:
89.93 deg	27.5°C	66.0%	1013 mb	4.9 kn	18.4 mm/km

No Aerosol:	3.8 microns: 15%	4.7 microns: 0%	10.5 microns: 5%
Navy Maritime:	3.8 microns: 20%	4.7 microns: 1%	10.5 microns: 8%
Maritime:	3.8 microns: 46%	4.7 microns: 10%	10.5 microns: 11%
Rural:	3.8 microns: 20%	4.7 microns: 1%	10.5 microns: 8%
Rural (5 km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Desert:	3.8 microns: —	4.7 microns: —	10.5 microns: —
Fog (0.5 km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Fog (0.2 km vis):	3.8 microns: —	4.7 microns: —	10.5 microns: —
Tran59_60:	3.8 microns: 90%	4.7 microns: 55%	10.5 microns: 65%
Tran:	3.8 microns: —	4.7 microns: —	10.5 microns: —
Tran:	3.8 microns: —	4.7 microns: —	10.5 microns: —

Table 13. Differences between LOWTRAN and actual data, Pensacola, FL (9/27/92).

From figure 64, the differences computed between the LOWTRAN predictions and the APA transmittance measurements (for three different wavelengths in these two infrared wavelength bands) are contained herein.

Condition:	Site:	S_H:	R_H:	Range
High Humidity	Pensacola - 27 Sept 92	3 m	3 m	2190 m

Zenith:	T:	REL_H:	P:	V_{ws}:	P_H:
90.00 deg	24.4°C	86.2%	1014 mb	7.3 kn	19.5 mm/km

No Aerosol:	3.8 microns: 20%	4.7 microns: 13%	10.5 microns: 27%
Navy Maritime:	3.8 microns: 23%	4.7 microns: 13%	10.5 microns: 27%
Maritime:	3.8 microns: 38%	4.7 microns: 20%	10.5 microns: 29%
Rural:	3.8 microns: 27%	4.7 microns: 15%	10.5 microns: 28%
Rural (5 km vis):	3.8 microns: --	4.7 microns: --	10.5 microns: --
Desert:	3.8 microns: --	4.7 microns: --	10.5 microns: --
Fog (0.5 km vis):	3.8 microns: --	4.7 microns: --	10.5 microns: --
Fog (0.2 km vis):	3.8 microns: --	4.7 microns: --	10.5 microns: --
*Tran114_115 :	3.8 microns: 90%	4.7 microns: 56%	10.5 microns: 65%
Tran119_115:	3.8 microns: 56%	4.7 microns: 30%	10.5 microns: 31%
Tran :	3.8 microns: --	4.7 microns: --	10.5 microns: --

Table 14. Differences between LOWTRAN and actual data, Pensacola, FL (9/28/92).

From figure 65, the differences computed between the LOWTRAN predictions and the APA transmittance measurements (for three different wavelengths in these two infrared wavelength bands) are contained herein.

Condition:	Site:	S_H:	R_H:	Range
High Humidity	Pensacola - 28 Sept 92	3 m	3 m	2190 m

Zenith:	T:	REL_H:	P:	V_{ws}:	P_H:
90.00 deg	28.4°C	66%	1014 mb	4.9 kn	18.9 mm/km

No Aerosol:	3.8 microns: 8%	4.7 microns: -6%	10.5 microns: -3%
Navy Maritime:	3.8 microns: 10%	4.7 microns: -6%	10.5 microns: -3%
Maritime:	3.8 microns: 18%	4.7 microns: -2%	10.5 microns: -2%
Rural:	3.8 microns: 13%	4.7 microns: -5%	10.5 microns: -2%
Rural (5 km vis):	3.8 microns: --	4.7 microns: --	10.5 microns: --
Desert:	3.8 microns: --	4.7 microns: --	10.5 microns: --
Fog (0.5 km vis):	3.8 microns: --	4.7 microns: --	10.5 microns: --
Fog (0.2 km vis):	3.8 microns: --	4.7 microns: --	10.5 microns: --
Tran140_139:	3.8 microns: 80%	4.7 microns: 42%	10.5 microns: 49%
Tran:	3.8 microns: --	4.7 microns: --	10.5 microns: --
Tran:	3.8 microns: --	4.7 microns: --	10.5 microns: --

The conclusions from the comparison analysis of APA LOWTRAN 7 are not surprising, in that, LOWTRAN's predictions are as good as the data input into the code. The special near-horizontal path geometries required by the APA experiments cause problems to LOWTRAN. The APA Adak data comparisons all show that LOWTRAN does a very good job in the prediction of the atmospheric transmittance values when the measured APA transmittance values in both infrared wavebands were relatively high; for example, greater than 85% transmittance and the water content was low at 2.7 to 4.7 mm/km. From the APA Adak data, it is found that for both infrared wavebands, none of the aerosol models is any better than the other, and the predictions by LOWTRAN are all roughly within 5% of the APA measured transmittance values. Also, in the Adak data of snow days, light snow has little effect on these high transmittance values. For the cases of moderate and heavy snow, there is a tremendous decrease in the infrared atmospheric transmittance, but this drop occurs in both bands, and LOWTRAN does not predict these losses in transmittance accurately.

The APA Pensacola data comparisons show even more inconsistencies in the prediction capabilities of LOWTRAN 7. Given that all of the days at APA Pensacola exhibited relatively high precipitable water content from 18.4 to 23.3 mm/km, vast inconsistencies were found in this data. In figure 62, the APA measured values in the 3- to 5-micron waveband are roughly 15% higher than those predicted by LOWTRAN 7, but in the 8- to 14-micron waveband, the APA measured values are roughly 15% lower than those predicted by LOWTRAN. The very next set of data shown in figure 63, however, does not exhibit the same trend. The APA measured values are roughly 20% higher than those predicted by LOWTRAN in the 3- to 5-micron waveband, but the APA measured values are roughly 8% higher than those predicted by LOWTRAN, in the 8- to 14-micron waveband. As shown in figure 64, the APA measured values are again much higher, by roughly 25% in both wavebands, than those predicted by LOWTRAN. This type of inconsistency in transmittance prediction capabilities, indicates that LOWTRAN cannot be trusted to give good atmospheric transmittance values throughout the world under various atmospheric and meteorological conditions, especially when adopting the special submarine-periscope imaging geometries of near-horizontal paths that are close to the ocean surface.

On a final note, even though wind speeds of 6 to 12 knots were encountered in Adak, LOWTRAN predicts that the amount of aerosol effect was, at most, 2% in the 3- to 5-micron waveband, and 5% in the 8- to 14-micron waveband. In the APA Pensacola data comparisons, major inconsistencies indicate that there were large changes in the amount of aerosols over all of the APA Pensacola deployment days, or that the data is so inconsistant, that meaningful conclusions cannot be drawn. Unfortunately, it is believed that the latter is true, given that the transmittance and water content values did not change much throughout the APA Pensacola deployment.

4.2 APA EXPERIMENT #2 ANALYSIS AND RESULTS

The goal of this experiment was to perform atmospheric MRT measurements simultaneously with the APA experiment #1 transmittance measurements. These MRT measurements were to be performed over identical paths as the transmittance measurements. (See figures 46 and 47 for the MRT results.) Both MRT results and resulting image quality analysis are summarized as follows.

4.2.1 Specifications of FLIRs Used In APA Deployments

The following FLIR cameras were used in the Adak and Pensacola APA deployment:

A. ADAK

1. RPC (Rank Pullin) Model SS600
    a) Detector: 8 to 14 SPRITE HgCdTe (British Common Module)
    b) Optics: 254-mm X9 Lens
2. Kodak
    a) Detector: 3 to 5 PtSi (512 X 640 Pixels)
    b) Optics: 300-mm Lens
3. Mitsubishi
    a) Detector: 3 to 5 PtSi (512 X 640 Pixels)
    b) Optics: 200-mm Lens

B. PENSACOLA

1. GEC (General Electric Company) V3800
    a) Detector: 8 to 14 SPRITE HgCdTe (British Common Module)
    b) Optics: X5 to X20 Zoom Lens
2. Mitsubishi
    a) Detector: 3 to 5 PtSi (512 X 640 Pixels)
    b)Optics: 200-mm Lens

4.2.2 Test Objective and Variations

The objective of the experiment was to compare the 3- to 5-micron and 8- to 14-micron FLIR cameras at the same times, and over the same path lengths as the transmittance experiment, as well as, take measurements at different spatial frequencies (large and small 4-bar targets). This ultimately presented many problems that resulted in modifying APA test procedures.

The physical geometry of the test sites presented a problem of working over the same pathlengths. The transmittance experiment required a pathlength of at least one Km,

which exceeded the FLIR's capability to resolve the small 4-bar target on the Blackbody Tank. The Blackbody Tank was moved closer to the FLIRs so that both 4-bar targets could be used. Figures 18 and 19 show the Adak and Pensacola APA test site geometries. In Pensacola, the physical geometry of the beach and the high tides forced the movement of the Blackbody Tank to a range beyond the FLIR's ability to resolve the small 4-bar target; thus, all Pensacola measurements are based on the large 4-bar target. Table 15 shows the range and corresponding spatial frequencies for the Blackbody Tank.

Table 15. Blackbody tank spatial frequencies.

Range(m)	fx_1(cycles/mrad)	fx_2(cycles/mrad)
500	1.846	3.106
600	2.216	3.727
685(Adak)	2.530	4.255
700	2.585	4.348
800	2.954	4.969
825(Pensacola)	3.047	5.123
900	3.323	5.590
1000	3.693	6.211
1100	4.062	6.832
1200	4.431	7.453
1300	4.801	8.075
1400	5.170	8.696
1500	5.539	9.317

NOTES:

Width(w_1) of each bar on small 4-bar target: 8.05 cm
Width(w_2) of each bar on large 4-bar target: 13.5 cm

Using the equation: Spatial Frequency = $1/(\tan^{-1}(2*\text{Width}/\text{Range}))$
where: Width = width of each bar
Range = distance from target to source

Sun loading, which presented the biggest challenge, ultimately forced testing to take place during the early morning and night hours. Even when the targets were completely shielded from direct sunlight, reflections from the sand and water created unacceptable temperature gradients across the targets surface. Although operating at night produced very solid delta T's and small gradients across the tank and targets, it was a variation from the objective of running this experiment simultaneously with the transmittance experiment. Running the transmittance experiment at night was virtually impossible because of the difficulties in aligning the SR-5000 with the two collimators.

Wind loading was not a factor during the experiment. Anticipating this to be the greatest challenge, the Blackbody Tank was positioned so that it was shielded from the anticipated winds. In general, the winds were very steady and much lighter than expected, as opposed to gusty winds that could have presented a bigger problem.

Despite the fact that the Blackbody Tank successfully aided in comparing the performances between the different FLIRs, the actual measured values of the delta T's for each system do not carry much value. Because the temperature probes have an associated error of 0.2°C and the tank and target gradients generally averaged around 0.3°C, it's quite possible the measured error is greater than the measured value of the delta T.

4.2.3 Image Quality Comparison

After reviewing the recorded MRT experiment tapes for both Adak and Pensacola, it was very evident that the amount of shot noise in the video was proportional to the water content in the air. The video from Adak (very dry with low water content less than 5 mm/km) was clear with very little shot noise, while the video from Pensacola (water content varied between 18 mm/km and 24 mm/km) was extremely noisy. This held true for both the 3- to 5-micron and 8- to 14-micron systems. It was even possible to see differences between the extreme conditions of water content in Pensacola. Comparing the GEC FLIR video 23 mm/km for 9/22/92 with 18 mm/km for 9/23/92, there is a considerably more shot noise on 9/22/92.

5.0 CONCLUSIONS

This section summarizes the results of the three APA experiments and presents final conclusions. These conclusions are based on the two APA deployments (APA Adak and APA Pensacola); therefore, they are not to be considered as all encompassing answers, but as a good starting point, where two data points begin to suggest that there is indeed a trend for atmospheric transmittance in the infrared wavelength regions (3 to 5 microns and 8 to 14 microns). This APA data is important for that reason. By design, the two APA deployments encountered vastly different atmospheric and meteorological conditions.

The APA Adak deployment sought a cold, arid, and sparse vegetation environment. This was to include; northern aerosol, high wind speed, and generally rough weather (rain, sleet, and snow conditions). The APA Adak deployment met these conditions to a good degree; however, there is a question as to whether the wind speeds and wave heights were large enough to generate a sufficient aerosol effect. From the APA LOWTRAN comparison analysis, it is suggested that a large aerosol effect was not present during these tests, but the ultimate answer to this question is still unknown.

The APA Pensacola deployment sought a very hot and humid environment. This goal was achieved to a very high degree. In fact, the APA data taken on 27 and 28 September 1992, where the temperatures were in excess of 24 degrees C and where the relative humidity approached 90%, the equipment began to have problems. This high humidity caused condensation on the detector window of the IR Spectroradiometer. The infrared detector is equal to liquid nitrogen temperature (77°C). Condensation started to become a problem at 90% relative humidity. Regardless, the APA Pensacola deployment did exhibit very hot and humid air conditions with very large resulting precipitable water contents (18.4 to 23.3 mm/km).

Given the atmospheric and meteorological conditions that occurred in these two APA deployments, it can be concluded that the APA experiments were performed over two

bounding atmospheric effects, that perhaps effect infrared sensor performance; for example, in very cold and dry air (2.7- to 4.7-mm precipitable water contents) to very hot and humid air (18.4 to 23.3 mm/km precipitable water content). It is within these two bounding effects that the APA was to determine if any trends existed. Once determined, the ultimate goal of the APA Program was to relate these trends and implications to the Photonics Mast System Design early into this system procurement cycle.

5.1 SUMMARY OF APA EXPERIMENT RESULTS

Experiment 1 Results: The APA transmittance runs from Adak were fairly flat across both wavebands, with only minor fluctuations. The APA transmittance values for the Pensacola runs, however, were not flat across the two wavebands. There were many fluctuations across both wavebands. The two locations showed noticeable differences in the beginning and ending of a waveband. Most of these wavelength shifts can be explained by inferring differences in the atmospheric constituent absorber amounts for the two vastly different locations; however, the amount and levels of this "banding" is surprising.

APA Adak Experiment 1 Results: Under the atmospheric condition of very low precipitable water content (2.7 to 4.7 mm/km), and under various forms of cold precipitation (rain, light snow, and heavy snow), the atmospheric transmittance in the 3- to 5-micron and 8- to 14-micron wavebands is very high (above 90%) and there is no appreciable difference in atmospheric transmittance between the two bands. For example, on a clear day (precipitable water content = 4.7 mm/km) in Adak on 20 February 1992, the average transmittance over the 3.479- to 3.995-micron waveband is 94%. At 4.612 microns, the atmospheric transmittance is 83%, and over the 8.969- to 11.498-micron waveband the average atmospheric transmittance is 92%. For the case of a light snowfall on 23 February 1992, the transmittance values decrease slightly when compared to those of a clear day, but the difference in average atmospheric transmittance values between the two wavebands stays relatively the same. For the light snowfall, the average transmittance over the 3.479- to 3.995-micron waveband drops to 75%, 4.612 microns drops to 69%, and the 8.969- to 11.498-micron waveband drops to 70%. Under the atmospheric and meterological conditions encountered in Adak, one waveband did not have a higher average atmospheric transmittance than the other. It should be noted that during the heavy snow data run (Tran 6508), the transmittance values dropped to 12% in the "white-out" condition, but with a visibility of 6 feet, the transmittance values were 70%.

APA Pensacola Experiment 1 Results: Under the atmospheric conditions of very high precipitable water content (18.4 to 23.3 mm/km), the atmospheric transmittance in the 3- to 5-micron waveband is 25 to 30% higher than the 8- to 14-micron waveband. For example, on 22 September 1992, the day of the highest precipitable water content (23.3 mm/km), the average transmittance over the 3.016- to 3.247-micron waveband is 36%. For the 3.479- to 3.621-micron waveband, the average transmittance increases to 85%. The transmittance continues to

rise over the 3.639- to 3.994-micron waveband to 90%. At 4.612 microns, the transmittance falls to 67%. Over the 8.969- to 9.601-micron waveband, the average transmittance decreases to 60% and continues to drop to 59% over the 9.659- to 12.01-micron waveband.

Experiment 2 Results: The atmospheric path MRT measurements and image quality results followed the same trends as the transmittance measurements. As the atmospheric transmittance decreased, the MRTs increased, and the image quality degraded. The image quality results also indicate that by taking into account the difference in field-of-views and magnifications of the two tested FLIR systems, the shot noise seems to be present in both FLIR systems. On the whole, the noise levels in the 8- to 14-micron FLIR systems are higher. The results of the MRT measurements performed over these APA atmospheric paths using the APA blackbody tank did not work as well as was anticipated. Sun-loading problems in both Adak and Pensacola led to gradients across the tank; these gradients were as large as the delta Ts that were being measured. Although much was learned in this experiment, the image quality analysis proved more useful than the MRT measurements.

Experiment 3 Results: A complete meterological database for both APA test sites was compiled and is provided in the appendices of this report. When compared to the actual measured atmospheric transmittance values, the results of the validation of the LOWTRAN code predictions of atmospheric transmittance were not encouraging. In the APA test in Adak, the LOWTRAN 7 - No Aerosol Model showed good agreement with only a 2.9% difference. For the Pensacola data, however, the LOWTRAN 7 predictions differed by as much as 20 to 30%.

5.2 PHOTONICS MAST PROGRAM IMPLICATIONS

Given the two extremes in precipitable water content that occurred during these two APA deployments, the following conclusions can be drawn: (1) For very low precipitable water content (2.7 to 4.7 mm/km) atmospheric conditions, which are typically encountered in the winter at latitudes greater than 40°N, the atmospheric transmittance in both wavebands is very high (in excess of 90%), and thus, there is no appreciable difference in atmospheric transmittance; (2) For very high precipitable water content (18.4 to 23.3 mm/km) atmospheric conditions, which are typical of the South Pacific, the atmospheric transmittance in the 3- to 5-micron waveband can be as much as 25% to 30% higher than in the 8- to 14-micron waveband. Submarines typically operate in both of these areas as well as areas that have precipitable water content values between the two extremes. The APA data support the recommendation that a high-performing, 3- to 5-micron SFPA FLIR system may be the "best" choice FLIR system for the Photonics Mast System.

The APA analysis also shows that there is much fluctuation of transmittance inside each of the two wavebands under consideration. This fluctuation may be very important to the manufacturing of the Photonics Mast when performing the FLIR system trade-off analysis. Although it is not commonly performed in the commercial FLIR market, some

tailoring of the detector's wavelength response inside these bands may — according to the APA data — yield better resulting performance than running with no filtering. By decreasing the wavelength bandwidth, overall detectivity of the detector will go up. By employing discrete band filters and correct doping of the infrared detector, a slight increase in performance may be possible. This analysis should be kept in mind throughout the selection of the "best" detector.

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APPENDIX A

WEATHER STATION DATA—ADAK AND PENSACOLA

Weather Data From Adak, AL (2/20/92-2/27/92)

	TEMP DEG C AVG	RH % AVG	WIND DIR OCT AVG	WIND SPD KTS AVG	BARO PRESS MB INST
02/20 00:00	3.5	0.2	1.	16.6	1005.
02/20 00:05	3.5	0.2	1.	11.5	1006.
02/20 00:11	3.5	0.2	1.	15.9	1005.
02/20 00:17	3.5	0.2	1.	12.0	1006.
02/20 00:23	3.5	0.2	1.	15.8	1005.
02/20 00:29	3.5	0.2	1.	12.1	1006.
02/20 00:35	3.6	0.2	1.	15.3	1006.
02/20 00:41	3.5	0.2	1.	10.2	1006.
02/20 00:47	3.6	0.2	1.	21.1	1005.
02/20 00:53	3.6	0.2	1.	16.1	1006.
02/20 00:59	3.5	0.2	1.	13.0	1006.
02/20 01:05	3.5	0.2	1.	17.3	1006.
02/20 01:11	3.5	0.2	1.	11.8	1006.
02/20 01:17	3.5	0.2	1.	16.7	1006.
02/20 01:23	3.4	0.2	1.	15.5	1006.
02/20 01:29	3.4	0.2	1.	17.0	1006.
02/20 01:35	3.5	0.2	1.	14.0	1005.
02/20 01:41	3.5	0.2	1.	18.2	1005.
02/20 01:47	3.6	0.2	1.	13.2	1006.
02/20 01:53	3.5	0.2	1.	16.8	1006.
02/20 01:59	3.4	0.2	1.	14.3	1006.
02/20 02:05	3.4	0.2	1.	16.1	1006.
02/20 02:11	3.4	0.2	1.	13.9	1005.
02/20 02:17	3.4	0.2	1.	19.6	1005.
02/20 02:23	3.4	0.2	2.	15.5	1006.
02/20 02:29	3.5	0.2	1.	17.7	1006.
02/20 02:35	3.6	0.2	1.	15.7	1005.
02/20 02:41	3.6	0.2	1.	13.2	1006.
02/20 02:47	3.5	0.2	1.	11.5	1006.
02/20 02:53	3.5	0.2	1.	11.7	1006.
02/20 02:59	3.4	0.2	1.	14.4	1006.
02/20 03:05	3.4	0.2	1.	16.4	1006.
02/20 03:11	3.6	0.2	1.	10.2	1005.
02/20 03:17	3.6	0.2	1.	11.9	1005.
02/20 03:23	3.7	0.2	2.	15.0	1006.
02/20 03:29	3.7	0.2	1.	12.0	1006.
02/20 03:35	3.7	0.2	1.	17.2	1005.
02/20 03:41	3.7	0.2	1.	12.9	1006.
02/20 03:47	3.7	0.2	1.	16.0	1006.
02/20 03:53	3.6	0.2	2.	9.5	1006.
02/20 03:59	3.6	0.2	1.	13.5	1005.
02/20 04:05	3.7	0.2	1.	13.0	1006.
02/20 04:11	3.6	0.2	1.	10.8	1006.
02/20 04:17	3.5	0.2	1.	6.2	1006.
02/20 04:23	3.5	0.2	1.	12.8	1006.
02/20 04:29	3.8	0.2	2.	10.5	1006.
02/20 04:35	3.9	0.2	2.	12.8	1006.
02/20 04:41	3.8	0.2	1.	11.4	1005.
02/20 04:47	3.9	0.2	2.	16.1	1005.
02/20 04:53	3.8	0.2	1.	10.9	1006.
02/20 04:59	3.8	0.2	2.	8.9	1006.
02/20 05:05	3.8	0.2	2.	9.4	1006.
02/20 05:11	3.6	0.2	0.	9.7	1006.
02/20 05:17	3.7	0.2	1.	12.8	1006.
02/20 05:23	3.7	0.2	2.	11.6	1006.
02/20 05:29	3.6	0.2	2.	4.6	1006.
02/20 05:35	3.6	0.2	2.	9.2	1006.
02/20 05:41	3.6	0.2	1.	5.6	1006.
02/20 05:47	3.4	0.2	1.	5.2	1006.
02/20 05:53	3.5	0.2	1.	8.1	1006.
02/20 05:59	3.5	0.2	2.	11.1	1006.
02/20 06:05	3.4	0.2	2.	8.1	1006.
02/20 06:11	3.4	0.2	2.	12.7	1005.
02/20 06:17	3.3	0.2	2.	9.2	1006.
02/20 06:23	3.2	0.2	1.	7.7	1006.
02/20 06:29	3.1	0.2	1.	7.3	1006.
02/20 06:35	3.3	0.2	2.	13.3	1006.
02/20 06:41	3.3	0.2	1.	7.6	1006.
02/20 06:47	3.2	0.2	1.	6.3	1006.
02/20 06:53	3.3	0.2	1.	8.6	1006.
02/20 06:59	3.1	0.2	1.	9.9	1006.
02/20 07:05	3.1	0.2	1.	12.7	1006.
02/20 07:11	3.0	0.2	1.	10.4	1006.
02/20 07:17	3.1	0.2	1.	5.6	1006.
02/20 07:23	3.1	0.2	2.	10.8	1005.
02/20 07:29	3.2	0.2	2.	9.1	1005.
02/20 07:35	3.1	0.2	1.	8.3	1006.
02/20 07:41	3.1	0.2	1.	9.0	1006.
02/20 07:47	3.1	0.2	2.	8.4	1006.
02/20 07:53	3.0	0.2	1.	12.5	1006.
02/20 07:59	3.0	0.2	1.	7.1	1006.
02/20 08:05	3.0	0.2	1.	10.3	1006.
02/20 08:11	3.0	0.2	1.	12.6	1005.
02/20 08:17	2.9	0.2	1.	13.0	1005.
02/20 08:23	2.9	0.2	1.	11.1	1005.
02/20 08:29	2.8	0.2	1.	11.5	1005.
02/20 08:35	2.8	0.2	1.	16.2	1006.
02/20 08:41	2.7	0.2	1.	11.7	1006.
02/20 08:47	2.7	0.2	1.	9.2	1005.
02/20 08:53	2.8	0.2	1.	13.1	1005.
02/20 08:59	3.0	0.2	1.	15.8	1005.
02/20 09:05	3.0	0.2	1.	16.0	1005.
02/20 09:11	3.1	0.2	1.	10.1	1005.
02/20 09:17	3.0	0.2	1.	11.8	1005.
02/20 09:23	3.1	0.2	1.	9.2	1006.
02/20 09:29	3.2	0.2	1.	10.9	1006.
02/20 09:35	3.1	0.2	1.	9.4	1006.
02/20 09:41	3.2	0.2	1.	12.3	1006.
02/20 09:47	3.3	0.2	1.	16.1	1006.
02/20 09:53	3.3	0.2	2.	10.9	1006.
02/20 09:59	3.2	0.2	1.	7.3	1006.
02/20 10:05	3.1	0.2	1.	9.9	1006.
02/20 10:11	3.1	0.2	1.	11.0	1006.
02/20 10:17	3.2	0.2	2.	12.3	1006.
02/20 10:23	3.2	0.2	2.	16.8	1006.
02/20 10:29	3.2	0.2	2.	10.4	1006.
02/20 10:35	3.0	0.2	1.	12.9	1006.
02/20 10:41	3.0	0.2	1.	11.3	1006.
02/20 10:47	3.0	0.2	2.	14.8	1006.
02/20 10:53	3.0	0.2	1.	13.2	1006.
02/20 10:59	3.1	0.2	2.	13.4	1006.
02/20 11:05	3.2	0.2	2.	15.9	1006.
02/20 11:11	3.0	0.2	2.	11.8	1006.
02/20 11:17	2.9	0.2	2.	11.7	1006.
02/20 11:23	3.0	0.2	2.	13.2	1007.
02/20 11:29	2.9	0.2	1.	10.2	1007.

02/20 11:35	2.8	0.2	1.	9.9	1007.
02/20 11:41	2.9	0.2	1.	10.5	1007.
02/20 11:47	3.0	0.2	1.	15.9	1007.
02/20 11:53	3.0	0.2	1.	8.8	1007.
02/20 11:59	3.1	0.2	2.	16.3	1007.
02/20 12:05	3.0	0.2	1.	11.7	1007.
02/20 12:11	3.1	0.2	1.	11.9	1007.
02/20 12:17	3.1	0.2	1.	12.9	1007.
02/20 12:23	3.2	0.2	1.	8.9	1007.
02/20 12:29	3.1	0.2	1.	9.3	1007.
02/20 12:35	2.9	0.2	1.	11.6	1007.
02/20 12:41	2.8	0.2	1.	12.6	1007.
02/20 12:47	2.9	0.2	1.	10.6	1007.
02/20 12:53	3.1	0.2	1.	14.0	1007.
02/20 12:59	3.2	0.2	2.	18.9	1007.
02/20 13:05	3.2	0.2	2.	17.5	1007.
02/20 13:11	3.2	0.2	2.	15.1	1007.
02/20 13:17	3.2	0.2	1.	9.1	1007.
02/20 13:23	3.2	0.2	1.	17.7	1007.
02/20 13:29	3.2	0.2	1.	7.7	1007.
02/20 13:35	3.3	0.2	2.	12.8	1007.
02/20 13:41	3.4	0.2	1.	12.4	1007.
02/20 13:47	3.5	0.2	1.	7.2	1007.
02/20 13:53	3.5	0.2	1.	11.4	1007.
02/20 13:59	3.5	0.2	1.	8.0	1007.
02/20 14:05	3.5	0.2	2.	16.2	1007.
02/20 14:11	3.5	0.2	1.	12.3	1007.
02/20 14:17	3.4	0.2	1.	14.0	1008.
02/20 14:23	3.6	0.2	2.	13.9	1008.
02/20 14:29	3.5	0.2	1.	6.0	1008.
02/20 14:35	3.6	0.2	1.	11.1	1008.
02/20 14:41	3.5	0.2	2.	13.6	1008.
02/20 14:47	3.4	0.2	2.	16.0	1008.
02/20 14:53	3.4	0.2	1.	13.6	1008.
02/20 14:59	3.4	0.2	2.	13.7	1008.
02/20 15:05	3.4	0.2	2.	16.6	1008.
02/20 15:11	3.4	0.2	2.	14.9	1008.
02/20 15:17	3.5	0.2	2.	12.0	1008.
02/20 15:23	3.5	0.2	2.	11.7	1008.
02/20 15:29	3.4	0.2	2.	13.9	1008.
02/20 15:35	3.4	0.2	1.	16.2	1007.
02/20 15:41	3.4	0.2	2.	11.0	1008.
02/20 15:47	3.3	0.2	2.	12.8	1008.
02/20 15:53	3.3	0.2	2.	13.4	1008.
02/20 15:59	3.2	0.2	2.	13.7	1008.
02/20 16:05	3.3	0.2	2.	16.3	1008.
02/20 16:11	3.2	0.2	2.	12.6	1008.
02/20 16:17	3.2	0.2	2.	8.9	1008.
02/20 16:23	3.3	0.2	2.	12.9	1008.
02/20 16:29	3.3	0.2	2.	15.6	1008.
02/20 16:35	3.3	0.2	2.	15.4	1008.
02/20 16:41	3.2	0.2	2.	19.1	1007.
02/20 16:47	3.1	0.2	2.	14.5	1008.
02/20 16:53	3.2	0.2	2.	11.8	1008.
02/20 16:59	3.2	0.2	2.	12.7	1008.
02/20 17:05	3.3	0.2	2.	14.4	1008.
02/20 17:11	3.4	0.2	1.	19.2	1007.
02/20 17:17	3.4	0.2	2.	18.7	1008.
02/20 17:23	3.3	0.2	1.	12.0	1008.
02/20 17:29	3.7	0.2	1.	13.6	1008.
02/20 17:35	3.4	0.2	1.	14.0	1008.
02/20 17:41	3.1	0.2	2.	13.9	1008.
02/20 17:47	2.9	0.2	1.	8.0	1008.
02/20 17:53	3.3	0.2	1.	10.0	1008.
02/20 17:59	3.4	0.2	1.	15.3	1008.
02/20 18:05	3.3	0.2	2.	12.6	1008.
02/20 18:11	3.1	0.2	1.	11.5	1008.
02/20 18:17	3.3	0.2	2.	16.2	1008.
02/20 18:23	3.4	0.2	1.	13.3	1008.
02/20 18:29	3.4	0.2	2.	13.0	1008.
02/20 18:35	3.5	0.2	2.	12.2	1008.
02/20 18:41	3.3	0.2	2.	19.9	1008.
02/20 18:47	3.3	0.2	2.	17.6	1008.
02/20 18:53	3.4	0.2	1.	12.6	1008.
02/20 18:59	3.3	0.2	2.	13.5	1008.
02/20 19:05	3.2	0.2	2.	13.4	1008.
02/20 19:11	3.1	0.2	2.	12.1	1008.
02/20 19:17	3.1	0.2	2.	14.1	1008.
02/20 19:23	2.9	0.2	2.	15.2	1008.
02/20 19:29	2.9	0.2	1.	16.2	1008.
02/20 19:35	3.1	0.2	1.	9.5	1008.
02/20 19:41	3.2	0.2	2.	15.2	1008.
02/20 19:47	3.2	0.2	2.	14.0	1008.
02/20 19:53	3.2	0.2	2.	14.1	1008.
02/20 19:59	3.2	0.2	2.	12.4	1008.
02/20 20:05	3.2	0.2	2.	15.3	1008.
02/20 20:11	3.2	0.2	2.	13.7	1008.
02/20 20:17	3.2	0.2	2.	11.3	1008.
02/20 20:23	3.2	0.2	2.	15.0	1008.
02/20 20:29	3.2	0.2	2.	12.4	1008.
02/20 20:35	3.2	0.2	2.	14.8	1008.
02/20 20:41	2.9	0.2	1.	8.2	1008.
02/20 20:47	3.0	0.2	1.	13.5	1008.
02/20 20:53	2.9	0.2	1.	12.9	1008.
02/20 20:59	2.8	0.2	2.	13.1	1008.
02/20 21:05	2.8	0.2	2.	11.8	1008.
02/20 21:11	2.7	0.2	1.	8.2	1008.
02/20 21:17	2.8	0.2	1.	13.6	1008.
02/20 21:23	3.0	0.2	2.	13.2	1008.
02/20 21:29	2.9	0.2	2.	14.3	1008.
02/20 21:35	2.8	0.2	2.	10.7	1008.
02/20 21:41	2.7	0.2	2.	14.2	1008.
02/20 21:47	2.6	0.2	2.	15.3	1009.
02/20 21:53	2.0	0.2	2.	12.0	1009.
02/20 21:59	2.0	0.2	1.	7.0	1009.
02/20 22:05	2.1	0.2	1.	8.0	1008.
02/20 22:11	2.5	0.2	1.	9.0	1008.
02/20 22:17	2.8	0.2	2.	12.9	1008.
02/20 22:23	2.4	0.2	2.	9.8	1008.
02/20 22:29	2.3	0.2	2.	7.8	1009.
02/20 22:35	2.3	0.2	1.	8.1	1009.
02/20 22:41	2.5	0.2	2.	14.9	1008.
02/20 22:47	2.4	0.2	1.	7.7	1009.
02/20 22:53	2.4	0.2	1.	7.6	1009.
02/20 22:59	2.7	0.2	1.	12.6	1009.
02/20 23:05	2.8	0.2	1.	7.8	1009.
02/20 23:11	3.0	0.2	2.	10.3	1009.
02/20 23:17	3.0	0.2	1.	12.2	1009.
02/20 23:23	3.0	0.2	1.	13.5	1009.
02/20 23:29	3.0	0.2	1.	12.6	1009.

02/20 23:35	2.9	0.2	1.	13.1	1009.
02/20 23:41	3.0	0.2	1.	9.4	1009.
02/20 23:47	3.0	0.2	2.	12.8	1009.
02/20 23:53	3.0	0.2	1.	12.4	1009.
02/20 23:59	3.0	0.2	1.	9.5	1009.

	TEMP DEG C AVG	RH % AVG	WIND DIR OCT AVG	WIND SPD KTS AVG	BARO PRESS MB INST
02/22 00:01	1.0	66.7	2.	12.1	1006.
02/22 00:07	1.0	66.6	2.	15.1	1006.
02/22 00:13	1.0	64.1	2.	9.8	1006.
02/22 00:19	1.0	64.9	2.	10.3	1006.
02/22 00:25	0.9	64.3	2.	10.2	1006.
02/22 00:31	0.9	66.0	2.	10.0	1006.
02/22 00:37	0.9	66.6	2.	8.0	1006.
02/22 00:43	0.9	67.0	2.	11.3	1006.
02/22 00:49	1.0	65.9	2.	10.7	1006.
02/22 00:55	1.0	65.4	2.	10.7	1006.
02/22 01:01	1.0	67.0	2.	11.9	1006.
02/22 01:07	1.0	68.1	2.	13.2	1006.
02/22 01:13	1.0	64.5	2.	10.3	1006.
02/22 01:19	0.9	65.2	2.	12.8	1006.
02/22 01:25	1.0	68.2	2.	10.5	1006.
02/22 01:31	1.0	69.3	2.	8.5	1006.
02/22 01:37	0.8	63.9	2.	6.9	1006.
02/22 01:43	0.9	64.8	2.	9.1	1006.
02/22 01:49	0.9	67.5	2.	11.3	1006.
02/22 01:55	0.9	66.2	2.	13.6	1006.
02/22 02:01	0.9	68.3	2.	9.6	1006.
02/22 02:07	0.8	64.7	2.	11.2	1006.
02/22 02:13	0.9	66.3	1.	13.5	1006.
02/22 02:19	0.9	68.8	2.	12.4	1006.
02/22 02:25	0.8	66.7	2.	9.2	1006.
02/22 02:31	0.9	66.9	2.	9.4	1006.
02/22 02:37	0.7	65.1	1.	7.9	1006.
02/22 02:43	0.8	67.4	2.	12.0	1006.
02/22 02:49	0.9	69.1	2.	15.6	1006.
02/22 02:55	0.9	67.1	2.	12.5	1006.
02/22 03:01	0.8	69.0	1.	10.3	1006.
02/22 03:07	1.0	68.6	2.	14.1	1006.
02/22 03:13	0.8	67.5	2.	11.1	1006.
02/22 03:19	0.8	67.8	2.	9.6	1006.
02/22 03:25	0.9	70.6	2.	10.6	1006.
02/22 03:31	0.9	70.9	1.	11.0	1006.
02/22 03:37	0.7	68.5	1.	7.8	1006.
02/22 03:43	0.9	71.9	2.	18.6	1006.
02/22 03:49	0.9	68.5	1.	10.4	1006.
02/22 03:55	0.9	70.2	2.	14.6	1006.
02/22 04:01	0.7	67.0	1.	10.7	1006.
02/22 04:07	0.9	67.1	1.	12.9	1006.
02/22 04:13	0.7	67.0	1.	13.8	1006.
02/22 04:19	0.7	65.3	1.	6.8	1006.
02/22 04:25	0.8	69.8	2.	10.8	1006.
02/22 04:31	0.8	65.6	2.	8.7	1006.
02/22 04:37	0.9	65.7	2.	14.0	1005.
02/22 04:43	0.8	69.2	2.	12.7	1006.
02/22 04:49	0.8	66.5	2.	10.5	1006.
02/22 04:55	0.8	70.6	2.	9.2	1006.
02/22 05:01	0.8	68.4	2.	11.2	1006.
02/22 05:07	0.6	65.1	1.	7.6	1006.
02/22 05:13	0.8	70.6	2.	13.2	1006.
02/22 05:19	0.7	67.7	2.	11.5	1006.
02/22 05:25	0.8	68.7	1.	17.9	1006.
02/22 05:31	0.5	61.8	1.	9.2	1006.
02/22 05:37	0.5	62.1	1.	7.3	1006.
02/22 05:43	0.6	65.4	2.	13.2	1006.
02/22 05:49	0.6	66.2	2.	8.8	1006.
02/22 05:55	0.6	65.9	2.	8.9	1006.
02/22 06:01	0.5	63.6	2.	6.9	1006.
02/22 06:07	0.5	66.5	2.	6.9	1006.
02/22 06:13	0.4	64.7	2.	6.9	1006.
02/22 06:19	0.4	63.4	2.	8.6	1006.
02/22 06:25	0.5	67.6	2.	12.1	1005.
02/22 06:31	0.5	64.7	2.	13.7	1005.
02/22 06:37	0.4	63.8	2.	14.1	1005.
02/22 06:43	0.4	63.0	2.	8.3	1006.
02/22 06:49	0.5	63.0	2.	11.0	1005.
02/22 06:55	0.5	65.5	2.	7.6	1006.
02/22 07:01	0.4	63.9	2.	10.0	1006.
02/22 07:07	0.5	64.9	2.	7.9	1006.
02/22 07:13	0.4	66.9	2.	6.5	1006.
02/22 07:19	0.4	64.5	1.	8.2	1006.
02/22 07:25	0.4	67.8	2.	9.4	1006.
02/22 07:31	0.4	67.2	1.	8.8	1006.
02/22 07:37	0.3	71.6	1.	12.4	1006.
02/22 07:43	0.4	72.1	2.	10.6	1006.
02/22 07:49	0.4	71.7	1.	11.6	1006.
02/22 07:55	0.4	73.0	2.	10.8	1006.
02/22 08:01	0.4	70.8	1.	9.8	1006.
02/22 08:07	0.4	68.7	2.	8.4	1006.
02/22 08:13	0.4	69.3	2.	9.5	1006.
02/22 08:19	0.4	72.0	2.	11.7	1006.
02/22 08:25	0.4	71.2	2.	10.1	1006.
02/22 08:31	0.4	68.5	2.	7.5	1006.
02/22 08:37	0.3	71.2	2.	8.8	1006.
02/22 08:43	0.3	67.3	1.	6.8	1006.
02/22 08:49	0.4	70.6	2.	8.2	1006.
02/22 08:55	0.3	70.7	2.	8.5	1006.
02/22 09:01	0.3	70.1	2.	9.3	1006.
02/22 09:07	0.3	66.6	2.	5.4	1006.
02/22 09:13	0.4	71.2	2.	7.9	1006.
02/22 09:19	0.3	70.2	2.	8.2	1006.
02/22 09:25	0.4	69.4	2.	10.9	1006.
02/22 09:31	0.3	72.0	2.	9.2	1006.
02/22 09:37	0.4	73.2	2.	9.0	1006.
02/22 09:43	0.3	68.1	2.	6.6	1006.
02/22 09:49	0.4	70.3	2.	9.9	1006.
02/22 09:55	0.4	70.1	2.	10.8	1006.
02/22 10:01	0.5	71.6	2.	12.9	1006.
02/22 10:07	0.5	71.9	2.	10.1	1006.
02/22 10:13	0.4	73.6	1.	10.9	1006.
02/22 10:19	0.2	70.1	1.	10.6	1006.
02/22 10:25	0.2	69.8	1.	7.6	1006.
02/22 10:31	0.1	68.1	1.	12.7	1006.
02/22 10:37	0.1	68.9	1.	10.0	1006.
02/22 10:43	0.2	69.9	2.	14.9	1006.
02/22 10:49	0.3	72.4	1.	15.9	1006.
02/22 10:55	0.2	69.3	1.	10.3	1006.

02/22 11:01	0.1	69.6	1.	10.5	1006.
02/22 11:07	0.0	68.6	1.	7.6	1006.
02/22 11:13	0.1	68.8	1.	16.0	1006.
02/22 11:19	0.2	64.3	1.	13.7	1006.
02/22 11:25	0.1	68.6	2.	10.6	1006.
02/22 11:31	0.1	64.3	1.	10.5	1006.
02/22 11:37	0.1	67.5	1.	10.5	1006.
02/22 11:43	0.1	67.7	1.	10.2	1006.
02/22 11:49	0.1	66.1	1.	11.4	1006.
02/22 11:55	0.2	66.5	1.	8.1	1006.
02/22 12:01	0.2	69.9	2.	12.8	1006.
02/22 12:07	0.4	68.7	2.	13.5	1006.
02/22 12:13	0.3	70.6	2.	13.5	1006.
02/22 12:19	0.3	67.7	1.	11.6	1006.
02/22 12:25	0.3	68.6	1.	13.9	1006.
02/22 12:31	0.3	69.3	1.	12.2	1006.
02/22 12:37	0.2	68.7	2.	12.9	1006.
02/22 12:43	0.4	74.7	2.	16.4	1006.
02/22 12:49	0.4	71.6	2.	15.5	1007.
02/22 12:55	0.3	69.8	1.	18.4	1007.
02/22 13:01	0.3	70.0	1.	12.6	1007.
02/22 13:07	0.3	69.6	1.	13.6	1007.
02/22 13:13	0.1	68.2	1.	9.1	1007.
02/22 13:19	0.3	73.5	2.	14.4	1007.
02/22 13:25	0.2	72.6	2.	14.9	1007.
02/22 13:31	0.1	68.9	1.	11.3	1007.
02/22 13:37	0.2	70.1	2.	11.2	1007.
02/22 13:43	0.2	73.1	2.	18.3	1007.
02/22 13:49	0.3	71.2	2.	20.5	1007.
02/22 13:55	0.4	75.6	2.	17.0	1007.
02/22 14:01	0.3	72.5	2.	17.3	1007.
02/22 14:07	0.1	68.5	1.	14.4	1007.
02/22 14:13	0.2	71.4	1.	12.0	1007.
02/22 14:19	0.2	68.5	1.	11.8	1007.
02/22 14:25	0.1	68.1	1.	8.6	1007.
02/22 14:31	0.2	67.1	1.	10.0	1007.
02/22 14:37	0.3	68.2	1.	10.6	1007.
02/22 14:43	0.3	72.5	1.	13.4	1007.
02/22 14:49	0.2	68.6	1.	8.5	1007.
02/22 14:55	0.1	67.0	1.	10.9	1007.
02/22 15:01	0.1	67.5	1.	11.3	1007.
02/22 15:07	0.1	65.2	1.	9.5	1007.
02/22 15:13	0.3	69.8	1.	8.1	1007.
02/22 15:19	0.2	66.0	1.	14.0	1007.
02/22 15:25	0.2	67.0	2.	10.3	1007.
02/22 15:31	0.3	67.7	1.	5.4	1007.
02/22 15:37	0.3	67.5	1.	8.7	1007.
02/22 15:43	0.3	68.6	1.	7.9	1007.
02/22 15:49	0.4	72.4	1.	8.3	1007.
02/22 15:55	0.2	70.8	1.	10.0	1007.
02/22 16:01	0.3	70.5	1.	10.2	1007.
02/22 16:07	0.3	67.9	1.	17.6	1007.
02/22 16:13	0.3	69.9	2.	18.1	1007.
02/22 16:19	0.3	69.2	2.	14.8	1007.
02/22 16:25	0.3	68.6	1.	9.5	1007.
02/22 16:31	0.3	67.2	1.	8.2	1007.
02/22 16:37	0.4	68.1	1.	13.4	1007.
02/22 16:43	0.4	69.9	2.	11.7	1007.
02/22 16:49	0.3	70.5	1.	10.1	1007.
02/22 16:55	0.4	71.3	1.	8.0	1007.
02/22 17:01	0.4	69.2	1.	7.1	1007.
02/22 17:07	0.4	69.9	1.	12.3	1007.
02/22 17:13	0.3	67.5	1.	12.1	1007.
02/22 17:19	0.3	66.4	1.	12.2	1007.
02/22 17:25	0.3	65.7	1.	10.1	1007.
02/22 17:31	0.3	70.3	1.	12.4	1007.
02/22 17:37	0.4	70.4	1.	11.4	1007.
02/22 17:43	0.3	69.0	1.	14.0	1007.
02/22 17:49	0.3	71.6	2.	12.4	1006.
02/22 17:55	0.4	75.5	1.	14.4	1006.
02/22 18:01	0.5	66.4	2.	11.0	1006.
02/22 18:07	0.6	67.8	1.	9.9	1006.
02/22 18:13	0.6	72.1	1.	15.3	1006.
02/22 18:19	0.4	71.7	2.	13.3	1006.
02/22 18:25	0.5	72.6	2.	13.6	1006.
02/22 18:31	0.3	69.6	1.	13.6	1006.
02/22 18:37	0.3	69.6	1.	12.9	1006.
02/22 18:43	0.3	69.0	1.	9.3	1007.
02/22 18:49	0.3	67.6	2.	12.4	1007.
02/22 18:55	0.3	68.0	1.	14.7	1007.
02/22 19:01	0.4	69.3	1.	14.1	1007.
02/22 19:07	0.4	67.9	1.	11.5	1007.
02/22 19:13	0.2	65.8	1.	10.4	1007.
02/22 19:19	0.2	67.4	1.	12.3	1007.
02/22 19:25	0.1	65.3	1.	9.1	1007.
02/22 19:36	0.2	69.6	2.	19.4	1006.
02/22 19:42	0.2	71.7	2.	11.3	1007.
02/22 19:48	0.1	69.4	1.	12.7	1007.
02/22 19:54	0.1	71.8	2.	12.0	1007.
02/22 20:00	0.1	67.6	1.	14.5	1007.
02/22 20:06	0.1	70.2	2.	6.6	1007.
02/22 20:12	0.1	67.7	1.	9.2	1007.
02/22 20:18	-0.1	66.3	1.	8.4	1007.
02/22 20:24	-0.1	68.3	0.	7.3	1007.
02/22 20:30	-0.1	67.5	0.	11.1	1007.
02/22 20:36	-0.1	68.7	1.	5.4	1007.
02/22 20:42	-0.1	68.7	1.	9.1	1007.
02/22 20:48	0.2	72.7	1.	11.7	1007.
02/22 20:54	0.1	69.7	1.	13.9	1007.
02/22 21:00	0.1	71.1	2.	14.9	1007.
02/22 21:06	0.1	70.1	2.	16.5	1007.
02/22 21:12	0.1	70.1	2.	14.2	1007.
02/22 21:18	0.0	66.8	1.	7.3	1007.
02/22 21:24	-0.1	65.5	0.	10.6	1007.
02/22 21:30	-0.2	62.9	8.	7.0	1007.
02/22 21:36	-0.2	63.1	0.	6.1	1007.
02/22 21:42	-0.1	65.9	1.	5.7	1007.
02/22 21:48	0.0	67.4	1.	12.5	1007.
02/22 21:54	0.1	66.7	1.	13.6	1007.
02/22 22:00	0.1	66.4	1.	8.8	1007.
02/22 22:06	0.0	63.9	1.	8.1	1007.
02/22 22:12	-0.1	63.6	1.	9.5	1007.
02/22 22:18	-0.1	62.2	0.	8.9	1007.
02/22 22:24	-0.1	61.2	1.	7.7	1007.
02/22 22:30	-0.1	63.3	0.	7.4	1007.
02/22 22:36	0.0	64.2	1.	10.4	1007.
02/22 22:42	0.2	63.5	1.	12.5	1007.
02/22 22:48	0.2	63.7	1.	7.1	1007.
02/22 22:54	0.1	61.3	1.	9.0	1007.
02/22 23:00	0.2	65.7	1.	8.8	1007.

02/22 23:06	0.2	62.6	1.	6.9	1007.
02/22 23:12	0.0	64.9	1.	4.0	1007.
02/22 23:18	-0.1	64.7	0.	7.0	1007.
02/22 23:24	-0.1	63.8	1.	6.8	1007.
02/22 23:30	0.0	61.8	1.	6.1	1007.
02/22 23:36	-0.1	64.6	0.	6.6	1007.
02/22 23:42	0.1	62.9	1.	12.2	1007.
02/22 23:48	0.3	64.6	2.	12.3	1008.
02/22 23:54	0.1	60.6	1.	8.5	1008.

	TEMP DEG C AVG	RH % AVG	WIND DIR OCT AVG	WIND SPD KTS AVG	BARO PRESS MB INST
02/23 00:00	0.0	62.2	1.	7.6	1008.
02/23 00:06	-0.1	61.4	1.	12.2	1008.
02/23 00:12	-0.2	62.5	0.	8.3	1008.
02/23 00:18	-0.3	63.0	0.	7.2	1008.
02/23 00:24	-0.1	61.0	1.	6.0	1008.
02/23 00:30	0.2	67.7	1.	9.6	1008.
02/23 00:36	0.3	71.7	2.	10.6	1008.
02/23 00:42	0.3	62.1	1.	9.6	1008.
02/23 00:48	0.0	62.1	1.	15.0	1008.
02/23 00:54	-0.1	62.1	1.	12.8	1008.
02/23 01:00	-0.1	62.4	1.	9.2	1008.
02/23 01:06	-0.1	63.6	1.	9.9	1008.
02/23 01:12	-0.1	62.7	1.	11.8	1008.
02/23 01:18	0.1	65.3	1.	11.8	1008.
02/23 01:24	0.0	64.5	1.	10.2	1008.
02/23 01:30	-0.1	63.8	1.	8.7	1008.
02/23 01:36	-0.2	63.8	0.	9.9	1008.
02/23 01:42	-0.3	61.8	1.	8.7	1008.
02/23 01:48	-0.2	62.5	0.	10.4	1008.
02/23 01:54	0.0	64.6	1.	11.5	1008.
02/23 02:00	0.0	66.7	2.	15.8	1008.
02/23 02:06	0.1	66.5	1.	16.2	1008.
02/23 02:12	-0.1	65.9	1.	9.2	1008.
02/23 02:18	-0.2	65.9	1.	8.7	1008.
02/23 02:24	-0.4	64.6	1.	13.6	1008.
02/23 02:30	-0.3	65.8	1.	7.5	1008.
02/23 02:36	-0.2	64.2	2.	18.4	1008.
02/23 02:42	-0.1	67.6	2.	17.8	1008.
02/23 02:48	-0.1	65.1	2.	16.0	1008.
02/23 02:54	0.0	68.8	1.	11.8	1008.
02/23 03:00	-0.3	65.0	2.	16.1	1008.
02/23 03:06	-0.3	63.8	1.	15.4	1008.
02/23 03:12	-0.2	60.9	1.	12.5	1008.
02/23 03:18	-0.2	62.5	1.	11.8	1008.
02/23 03:24	-0.1	67.2	1.	8.4	1008.
02/23 03:30	-0.2	65.4	2.	14.6	1008.
02/23 03:36	-0.4	66.4	1.	13.4	1008.
02/23 03:42	-0.3	68.0	1.	8.3	1008.
02/23 03:48	-0.5	62.3	1.	17.1	1008.
02/23 03:54	-0.7	62.7	1.	17.3	1008.
02/23 04:00	-0.4	61.7	1.	12.2	1008.
02/23 04:06	-0.5	60.8	2.	10.5	1008.
02/23 04:12	-0.4	61.0	1.	11.2	1008.
02/23 04:18	-0.5	61.5	1.	13.2	1008.
02/23 04:24	-0.4	66.2	1.	12.1	1008.
02/23 04:30	-0.6	65.6	1.	7.5	1008.
02/23 04:36	-0.7	65.6	1.	10.6	1008.
02/23 04:42	-0.8	66.4	1.	7.6	1008.
02/23 04:48	-0.8	63.6	1.	6.9	1008.
02/23 04:54	-0.6	61.5	1.	12.6	1008.
02/23 05:00	-0.6	62.6	1.	11.4	1008.
02/23 05:06	-0.5	67.2	2.	14.8	1008.
02/23 05:12	-0.5	63.9	1.	9.1	1008.
02/23 05:18	-0.5	62.7	1.	11.5	1008.
02/23 05:24	-0.4	64.1	1.	11.7	1008.
02/23 05:30	-0.7	66.8	1.	8.8	1008.
02/23 05:36	-0.8	67.1	1.	9.8	1008.
02/23 05:42	-0.8	70.2	2.	12.5	1008.
02/23 05:48	-1.0	68.5	1.	12.4	1008.
02/23 05:54	-1.1	72.1	1.	9.3	1008.
02/23 06:00	-1.0	67.5	1.	10.8	1008.
02/23 06:06	-0.9	64.4	1.	9.9	1008.
02/23 06:12	-0.9	63.0	1.	9.3	1008.
02/23 06:18	-1.0	60.5	1.	7.9	1007.
02/23 06:24	-0.8	59.9	1.	13.1	1007.
02/23 06:30	-0.8	58.3	1.	9.5	1007.
02/23 06:36	-0.7	59.5	1.	10.8	1007.
02/23 06:42	-0.7	60.2	1.	10.0	1007.
02/23 06:48	-0.7	64.6	1.	6.7	1007.
02/23 06:54	-0.8	65.4	1.	8.4	1007.
02/23 07:00	-0.8	66.9	1.	11.4	1007.
02/23 07:06	-1.0	69.1	1.	5.9	1007.
02/23 07:12	-1.0	70.6	1.	12.2	1007.
02/23 07:18	-1.1	69.9	1.	8.0	1008.
02/23 07:24	-1.3	64.6	1.	6.8	1008.
02/23 07:30	-1.1	64.4	1.	14.1	1007.
02/23 07:36	-1.0	63.9	1.	11.7	1007.
02/23 07:42	-1.0	65.5	1.	4.1	1007.
02/23 07:48	-1.0	66.1	1.	8.1	1007.
02/23 07:54	-1.1	67.0	1.	8.1	1007.
02/23 08:00	-1.1	65.0	0.	7.3	1007.
02/23 08:06	-1.0	67.4	1.	16.9	1007.
02/23 08:12	-1.2	65.9	1.	8.5	1007.
02/23 08:18	-1.1	65.6	1.	12.5	1007.
02/23 08:24	-1.0	68.6	1.	8.5	1007.
02/23 08:30	-1.1	65.6	1.	7.0	1007.
02/23 08:36	-1.2	65.7	1.	5.5	1007.
02/23 08:42	-1.1	65.1	1.	10.5	1007.
02/23 08:48	-1.0	64.2	1.	9.1	1007.
02/23 08:54	-0.9	65.9	1.	6.1	1007.
02/23 09:00	-0.9	64.8	1.	14.3	1007.
02/23 09:06	-0.8	61.2	1.	10.9	1007.
02/23 09:12	-0.7	64.1	1.	11.8	1007.
02/23 09:18	-0.8	62.8	1.	8.4	1007.
02/23 09:24	-0.8	64.2	1.	8.6	1007.
02/23 09:30	-0.8	62.8	0.	11.2	1007.
02/23 09:36	-0.8	60.4	1.	19.0	1007.
02/23 09:42	-1.0	63.5	1.	17.0	1007.
02/23 09:48	-1.2	67.4	1.	10.2	1007.
02/23 09:54	-1.1	66.0	1.	7.4	1008.
02/23 10:00	-1.1	63.4	1.	16.6	1007.
02/23 10:06	-1.0	63.3	1.	8.6	1007.
02/23 10:12	-1.0	60.5	1.	7.5	1008.
02/23 10:18	-1.0	60.3	0.	10.5	1007.
02/23 10:24	-0.9	61.3	1.	13.8	1007.
02/23 10:30	-0.9	58.9	1.	10.0	1007.

02/23 10:36	-0.9	66.4	1.	13.0	1007.
02/23 10:42	-1.0	63.6	1.	10.7	1008.
02/23 10:48	-1.0	60.7	1.	16.2	1007.
02/23 10:54	-1.0	62.1	1.	7.5	1007.
02/23 11:00	-1.0	61.8	1.	7.6	1007.
02/23 11:06	-0.9	60.9	1.	11.4	1007.
02/23 11:12	-1.0	59.0	1.	7.5	1008.
02/23 11:18	-0.9	59.9	1.	10.3	1008.
02/23 11:24	-0.9	61.5	1.	13.7	1008.
02/23 11:30	-1.0	59.1	0.	12.2	1008.
02/23 11:36	-1.0	62.0	1.	8.6	1008.
02/23 11:42	-1.1	62.6	1.	9.8	1008.
02/23 11:48	-1.0	62.1	1.	9.8	1008.
02/23 11:54	-1.0	61.4	1.	9.8	1008.
02/23 12:00	-0.9	61.5	1.	11.6	1008.
02/23 12:06	-0.9	60.9	1.	7.5	1008.
02/23 12:12	-1.0	64.3	1.	11.5	1008.
02/23 12:18	-1.1	65.9	1.	8.4	1008.
02/23 12:24	-1.1	63.6	1.	6.1	1008.
02/23 12:30	-1.0	63.0	1.	12.3	1008.
02/23 12:36	-1.0	60.8	1.	10.4	1008.
02/23 12:42	-0.9	63.6	1.	13.8	1008.
02/23 12:48	-1.0	64.7	1.	9.1	1008.
02/23 12:54	-1.0	63.2	1.	9.4	1008.
02/23 13:00	-1.0	64.3	1.	10.0	1008.
02/23 13:06	-1.0	60.8	1.	12.6	1008.
02/23 13:12	-1.0	61.8	1.	15.2	1008.
02/23 13:18	-1.0	62.8	1.	11.1	1008.
02/23 13:24	-1.0	64.6	1.	13.1	1008.
02/23 13:30	-0.9	65.9	1.	10.4	1008.
02/23 13:36	-0.9	59.9	1.	10.9	1008.
02/23 13:42	-0.9	57.1	1.	12.5	1008.
02/23 13:48	-0.9	59.4	1.	16.7	1008.
02/23 13:54	-0.9	57.1	1.	11.1	1008.
02/23 14:00	-0.8	55.9	1.	10.3	1008.
02/23 14:06	-0.9	58.1	1.	13.4	1008.
02/23 14:12	-0.9	60.6	1.	7.2	1008.
02/23 14:18	-0.6	61.3	1.	9.0	1008.
02/23 14:24	-0.7	59.8	1.	12.3	1008.
02/23 14:30	-0.7	59.9	1.	11.1	1008.
02/23 14:36	-0.7	56.1	0.	12.7	1008.
02/23 14:42	-0.6	58.8	1.	10.1	1008.
02/23 14:48	-0.5	60.8	1.	12.5	1008.
02/23 14:54	-0.5	63.2	1.	10.5	1008.
02/23 15:00	-0.8	62.4	1.	8.0	1008.
02/23 15:06	-0.7	63.6	1.	5.8	1008.
02/23 15:12	-0.5	58.3	1.	13.0	1008.
02/23 15:18	-0.4	59.2	1.	6.7	1008.
02/23 15:24	-0.5	56.4	0.	12.6	1008.
02/23 15:30	-0.7	60.1	1.	11.0	1008.
02/23 15:36	-0.8	57.8	0.	12.5	1008.
02/23 15:42	-0.7	60.0	0.	10.6	1008.
02/23 15:48	-0.6	59.3	1.	9.0	1008.
02/23 15:54	-0.5	55.1	1.	14.9	1008.
02/23 16:00	-0.5	55.3	1.	15.6	1008.
02/23 16:06	-0.4	56.3	1.	12.4	1008.
02/23 16:12	-0.4	57.8	1.	10.0	1008.
02/23 16:18	-0.4	60.5	0.	8.7	1008.
02/23 16:24	-0.4	58.6	0.	15.8	1008.
02/23 16:30	-0.7	63.6	1.	13.4	1008.
02/23 16:36	-0.7	64.1	1.	9.0	1007.
02/23 16:42	-0.3	55.5	1.	7.8	1007.
02/23 16:48	-0.1	54.2	1.	11.5	1007.
02/23 16:54	-0.3	61.1	0.	9.9	1007.
02/23 17:00	-0.4	60.4	1.	10.3	1007.
02/23 17:06	-0.4	59.3	1.	12.7	1007.
02/23 17:12	-0.6	61.5	1.	9.8	1007.
02/23 17:18	-0.5	62.0	1.	8.4	1007.
02/23 17:24	-0.4	61.9	1.	6.7	1007.
02/23 17:30	-0.5	62.1	0.	7.4	1007.
02/23 17:36	-0.6	65.6	0.	9.6	1007.
02/23 17:42	-0.6	72.3	0.	13.2	1007.
02/23 17:48	-0.8	73.8	1.	10.4	1007.
02/23 17:54	-0.7	73.1	1.	10.9	1007.
02/23 18:00	-0.7	76.7	0.	7.1	1007.
02/23 18:06	-0.9	75.9	0.	10.1	1007.
02/23 18:12	-0.7	67.6	1.	12.2	1007.
02/23 18:18	-0.4	61.1	1.	10.8	1007.
02/23 18:24	-0.4	62.3	0.	11.6	1007.
02/23 18:30	-0.4	60.9	0.	9.3	1007.
02/23 18:36	-0.4	60.8	0.	8.5	1007.
02/23 18:42	-0.4	60.1	1.	16.2	1007.
02/23 18:48	-0.4	64.2	1.	11.8	1007.
02/23 18:54	-0.5	59.9	1.	11.3	1007.
02/23 19:00	-0.5	57.5	7.	9.9	1007.
02/23 19:06	-0.5	56.7	0.	7.5	1007.
02/23 19:12	-0.5	53.9	0.	12.1	1007.
02/23 19:18	-0.6	52.9	1.	13.0	1007.
02/23 19:24	-0.7	53.6	1.	8.5	1007.
02/23 19:30	-0.7	55.5	1.	10.6	1007.
02/23 19:36	-0.7	61.9	1.	10.1	1007.
02/23 19:42	-0.9	65.7	1.	8.8	1007.
02/23 19:48	-0.8	67.3	1.	11.9	1007.
02/23 19:54	-0.9	66.8	0.	13.1	1007.
02/23 20:00	-0.8	66.9	0.	9.7	1007.
02/23 20:06	-0.9	59.6	0.	9.1	1007.
02/23 20:12	-0.8	58.0	1.	6.1	1007.
02/23 20:18	-0.9	54.0	1.	9.6	1007.
02/23 20:24	-0.9	54.1	0.	14.6	1007.
02/23 20:30	-0.9	57.8	0.	8.7	1007.
02/23 20:36	-1.2	67.4	1.	10.1	1007.
02/23 20:42	-1.2	67.6	1.	11.2	1007.
02/23 20:48	-1.2	64.0	0.	8.5	1007.
02/23 20:54	-1.2	64.5	0.	10.2	1007.
02/23 21:00	-1.3	68.4	1.	13.2	1007.
02/23 21:06	-1.2	68.0	1.	8.8	1007.
02/23 21:12	-1.2	67.6	0.	9.9	1007.
02/23 21:18	-1.0	55.1	0.	11.5	1007.
02/23 21:24	-1.0	55.0	0.	10.4	1007.
02/23 21:30	-1.0	54.8	1.	6.5	1007.
02/23 21:36	-1.0	63.3	1.	10.1	1007.
02/23 21:42	-1.1	67.4	0.	10.0	1007.
02/23 21:48	-1.2	63.2	0.	8.3	1007.
02/23 21:54	-1.1	60.2	0.	16.4	1007.
02/23 22:00	-1.0	57.0	1.	14.2	1007.
02/23 22:06	-1.0	61.6	0.	12.0	1007.
02/23 22:12	-1.1	59.3	1.	11.2	1007.
02/23 22:18	-1.0	62.6	1.	13.8	1007.
02/23 22:24	-1.1	58.9	0.	9.7	1007.
02/23 22:30	-1.1	57.5	0.	10.4	1007.

	TEMP DEG C AVG	RH % AVG	WIND DIR OCT AVG	WIND SPD KTS AVG	BARO PRESS MB INST
02/23 22:36	-1.2	55.7	0.	8.5	1007.
02/23 22:42	-1.3	55.2	0.	10.5	1007.
02/23 22:48	-1.2	56.3	1.	14.6	1007.
02/23 22:54	-1.1	58.5	0.	12.7	1007.
02/23 23:00	-1.1	57.1	1.	11.2	1007.
02/23 23:06	-1.2	58.9	0.	7.8	1007.
02/23 23:12	-1.1	60.0	1.	7.7	1007.
02/23 23:18	-1.0	61.3	1.	11.2	1007.
02/23 23:24	-1.1	60.4	1.	11.2	1007.
02/23 23:30	-1.2	62.7	0.	13.9	1007.
02/23 23:36	-1.2	57.7	0.	13.1	1007.
02/23 23:42	-1.2	58.6	1.	7.0	1007.
02/23 23:48	-1.2	56.2	8.	9.0	1007.
02/23 23:54	-1.2	57.6	0.	8.8	1007.
02/24 00:00	-1.2	62.7	1.	13.0	1007.
02/24 00:06	-1.1	66.0	0.	10.2	1007.
02/24 00:12	-1.4	67.8	1.	8.3	1007.
02/24 00:18	-1.3	69.8	1.	9.0	1007.
02/24 00:24	-1.2	62.6	1.	12.1	1007.
02/24 00:30	-1.2	65.8	0.	8.7	1007.
02/24 00:36	-1.2	55.3	0.	9.7	1007.
02/24 00:42	-1.2	56.7	1.	11.2	1007.
02/24 00:48	-1.2	54.8	0.	10.1	1007.
02/24 00:54	-1.1	55.9	1.	15.6	1007.
02/24 01:00	-1.0	58.8	1.	10.8	1007.
02/24 01:06	-0.9	60.5	1.	14.4	1007.
02/24 01:12	-0.9	57.0	1.	12.9	1007.
02/24 01:18	-0.8	62.0	1.	14.3	1007.
02/24 01:24	-1.0	58.9	0.	7.9	1007.
02/24 01:30	-1.1	58.9	0.	4.6	1007.
02/24 01:36	-1.1	58.9	0.	11.0	1007.
02/24 01:42	-1.0	59.2	1.	9.5	1007.
02/24 01:48	-1.1	56.0	0.	8.5	1007.
02/24 01:54	-1.0	53.0	1.	10.1	1007.
02/24 02:00	-1.0	52.5	1.	11.9	1007.
02/24 02:06	-1.0	56.3	1.	11.6	1007.
02/24 02:12	-1.0	58.5	1.	15.3	1007.
02/24 02:18	-1.1	61.4	0.	9.7	1007.
02/24 02:24	-1.1	63.3	1.	9.1	1007.
02/24 02:30	-1.2	69.0	1.	15.3	1007.
02/24 02:36	-1.4	75.2	0.	16.5	1007.
02/24 02:42	-1.8	0.2	1.	13.3	1007.
02/24 02:48	-1.8	0.2	0.	8.2	1007.
02/24 02:54	-1.6	0.2	0.	7.7	1007.
02/24 03:00	-1.5	0.2	0.	12.3	1007.
02/24 03:06	-1.8	0.2	0.	7.8	1007.
02/24 03:12	-1.9	0.2	0.	3.2	1007.
02/24 03:18	-1.9	0.2	8.	5.1	1007.
02/24 03:24	-1.8	78.9	8.	8.1	1007.
02/24 03:30	-1.8	77.4	0.	9.4	1007.
02/24 03:36	-1.8	78.3	0.	11.0	1007.
02/24 03:42	-1.9	0.2	0.	7.7	1007.
02/24 03:48	-1.7	0.2	1.	14.7	1007.
02/24 03:54	-1.6	0.2	0.	15.5	1007.
02/24 04:00	-1.5	0.2	1.	6.6	1007.
02/24 04:06	-1.5	0.2	0.	5.2	1007.
02/24 04:12	-1.6	0.2	0.	10.9	1007.
02/24 04:18	-1.8	0.2	0.	7.3	1007.
02/24 04:24	-1.9	0.2	1.	6.8	1007.
02/24 04:30	-1.8	0.2	0.	7.7	1007.
02/24 04:36	-1.8	0.2	8.	8.8	1007.
02/24 04:42	-1.8	0.2	0.	7.7	1007.
02/24 04:48	-1.7	0.2	1.	5.8	1007.
02/24 04:54	-1.8	0.2	0.	3.9	1007.
02/24 05:00	-1.8	0.2	1.	8.7	1006.
02/24 05:06	-1.7	0.2	8.	9.0	1006.
02/24 05:12	-1.5	0.2	0.	9.4	1007.
02/24 05:18	-1.7	0.2	0.	9.7	1006.
02/24 05:24	-1.8	0.2	0.	5.3	1006.
02/24 05:30	-1.8	0.2	7.	9.6	1006.
02/24 05:36	-1.8	0.2	0.	7.0	1006.
02/24 05:42	-1.7	0.2	0.	9.6	1006.
02/24 05:48	-1.6	0.2	0.	11.2	1006.
02/24 05:54	-1.7	0.2	0.	10.0	1006.
02/24 06:00	-1.7	0.2	0.	15.1	1006.
02/24 06:06	-2.2	0.2	8.	5.8	1006.
02/24 06:12	-2.2	0.2	1.	7.4	1006.
02/24 06:18	-2.0	0.2	0.	8.4	1006.
02/24 06:24	-1.7	0.2	1.	9.0	1006.
02/24 06:30	-1.5	0.2	1.	15.6	1006.
02/24 06:36	-1.8	0.2	0.	6.8	1006.
02/24 06:42	-1.8	0.2	0.	8.9	1006.
02/24 06:48	-1.7	0.2	0.	4.2	1006.
02/24 06:54	-1.6	0.2	0.	8.4	1006.
02/24 07:00	-1.7	0.2	0.	7.4	1006.
02/24 07:06	-1.8	0.2	0.	8.2	1006.
02/24 07:12	-1.7	0.2	8.	13.0	1006.
02/24 07:18	-2.2	0.2	0.	11.0	1006.
02/24 07:24	-2.3	0.2	8.	11.0	1006.
02/24 07:30	-2.3	0.2	0.	7.0	1006.
02/24 07:36	-2.3	0.2	8.	7.1	1006.
02/24 07:42	-2.2	0.2	0.	6.6	1006.
02/24 07:48	-2.1	0.2	1.	8.0	1006.
02/24 07:54	-2.2	0.2	0.	5.6	1006.
02/24 08:00	-2.7	0.2	8.	4.7	1006.
02/24 08:06	-2.7	0.2	0.	4.2	1006.
02/24 08:12	-2.6	0.2	1.	4.0	1006.
02/24 08:18	-2.2	0.2	8.	7.2	1006.
02/24 08:24	-1.9	0.2	0.	10.0	1006.
02/24 08:30	-2.1	0.2	1.	11.1	1006.
02/24 08:36	-2.3	0.2	1.	14.9	1006.
02/24 08:42	-2.5	0.2	0.	6.8	1006.
02/24 08:48	-2.5	0.2	1.	6.9	1006.
02/24 08:54	-2.2	0.2	0.	10.0	1006.
02/24 09:00	-2.2	0.2	8.	9.6	1006.
02/24 09:06	-2.3	0.2	8.	9.4	1006.
02/24 09:12	-2.2	0.2	1.	15.1	1006.
02/24 09:18	-2.4	0.2	0.	7.8	1006.
02/24 09:24	-2.5	0.2	0.	7.2	1006.
02/24 09:30	-2.5	0.2	0.	8.0	1006.
02/24 09:36	-2.4	0.2	0.	5.9	1006.
02/24 09:42	-2.4	0.2	8.	4.5	1006.
02/24 09:48	-2.3	0.2	1.	5.5	1006.
02/24 09:54	-2.0	0.2	0.	6.9	1006.
02/24 10:00	-2.1	0.2	0.	10.0	1006.

02/24 10:06	-2.2	0.2	1.	12.6	1006.
02/24 10:12	-2.5	0.2	0.	12.3	1006.
02/24 10:18	-2.7	0.2	0.	4.8	1006.
02/24 10:24	-2.4	0.2	0.	8.1	1006.
02/24 10:30	-2.2	0.2	0.	12.5	1006.
02/24 10:36	-2.2	0.2	1.	6.9	1006.
02/24 10:42	-2.2	0.2	1.	10.3	1006.
02/24 10:48	-2.1	0.2	1.	10.0	1006.
02/24 10:54	-2.3	0.2	1.	8.8	1006.
02/24 11:00	-2.2	0.2	1.	6.4	1006.
02/24 11:06	-2.3	0.2	0.	10.9	1006.
02/24 11:12	-2.4	0.2	8.	5.4	1006.
02/24 11:18	-2.1	0.2	8.	4.5	1006.
02/24 11:24	-1.8	0.2	0.	10.3	1006.
02/24 11:30	-2.0	0.2	8.	12.7	1006.
02/24 11:36	-2.0	0.2	8.	8.0	1006.
02/24 11:42	-2.0	0.2	7.	7.8	1006.
02/24 11:48	-1.9	0.2	8.	7.5	1006.
02/24 11:54	-1.6	0.2	0.	10.0	1006.
02/24 12:00	-1.5	0.2	8.	13.6	1006.
02/24 12:06	-1.3	63.8	7.	10.4	1006.
02/24 12:12	-1.2	63.0	7.	9.1	1006.
02/24 12:18	-1.3	59.6	7.	13.1	1006.
02/24 12:24	-1.4	72.8	0.	9.0	1006.
02/24 12:30	-1.9	81.4	7.	6.4	1006.
02/24 12:36	-1.9	77.3	8.	16.7	1006.
02/24 12:42	-2.0	77.6	7.	4.9	1006.
02/24 12:48	-1.5	71.9	8.	6.4	1006.
02/24 12:54	-1.3	72.8	8.	11.4	1006.
02/24 13:00	-1.8	73.1	8.	9.8	1006.
02/24 13:06	-1.1	78.3	7.	11.2	1006.
02/24 13:12	-2.2	0.2	8.	8.5	1006.
02/24 13:18	-2.2	0.2	7.	5.2	1006.
02/24 13:24	-1.8	0.2	7.	6.1	1006.
02/24 13:30	-1.2	0.2	7.	7.6	1006.
02/24 13:36	-0.9	0.2	7.	8.3	1006.
02/24 13:42	-1.0	0.2	7.	10.7	1006.
02/24 13:48	-1.0	0.2	7.	16.3	1006.
02/24 13:54	-1.1	0.2	8.	13.0	1006.
02/24 14:00	-1.3	0.2	7.	7.8	1006.
02/24 14:06	-1.1	0.2	7.	9.7	1006.
02/24 14:12	-0.4	62.5	7.	9.5	1006.
02/24 14:18	-0.1	58.6	0.	11.3	1006.
02/24 14:24	0.0	64.1	8.	11.2	1006.
02/24 14:30	-0.1	66.7	7.	7.7	1006.
02/24 14:36	-0.6	75.9	0.	19.0	1006.
02/24 14:42	-1.5	82.4	7.	11.4	1006.
02/24 14:48	-1.8	82.8	7.	4.8	1006.
02/24 14:54	-1.5	79.3	8.	6.3	1006.
02/24 15:00	-1.3	79.0	0.	5.5	1006.
02/24 15:06	-0.7	69.6	0.	7.5	1006.
02/24 15:12	-0.7	72.6	0.	8.7	1006.
02/24 15:18	-0.5	73.5	0.	8.8	1006.
02/24 15:24	-0.7	70.4	8.	15.4	1005.
02/24 15:30	-0.5	66.2	8.	9.9	1006.
02/24 15:36	-0.6	64.6	8.	14.1	1006.
02/24 15:42	-0.3	66.3	0.	12.6	1006.
02/24 15:48	-0.3	66.7	8.	7.0	1006.
02/24 15:54	-0.2	0.2	7.	11.9	1005.
02/24 16:00	-1.3	0.2	8.	10.1	1005.
02/24 16:06	-1.1	0.2	7.	12.9	1005.
02/24 16:12	-0.5	0.2	8.	12.8	1005.
02/24 16:18	-0.1	0.2	7.	8.8	1005.
02/24 16:24	-0.1	0.2	7.	12.0	1005.
02/24 16:30	-0.1	0.2	7.	13.0	1005.
02/24 16:36	-0.2	65.3	7.	8.7	1005.
02/24 16:42	-0.2	66.7	8.	7.4	1005.
02/24 16:48	0.1	72.4	8.	17.3	1005.
02/24 16:54	-0.6	77.5	8.	15.8	1005.
02/24 17:00	-0.3	75.4	8.	12.6	1005.
02/24 17:06	-0.4	70.5	8.	8.9	1005.
02/24 17:12	-1.5	86.3	1.	11.6	1005.
02/24 17:18	-2.1	90.2	7.	9.8	1005.
02/24 17:24	-1.5	83.3	7.	11.4	1005.
02/24 17:30	-1.0	77.3	7.	9.2	1005.
02/24 17:36	-0.6	71.2	8.	6.5	1005.
02/24 17:42	-0.2	67.6	8.	13.1	1005.
02/24 17:48	0.4	69.1	7.	15.8	1004.
02/24 17:54	-0.2	68.5	8.	19.0	1004.
02/24 18:00	0.0	66.5	8.	11.8	1004.
02/24 18:06	0.2	65.0	8.	14.4	1004.
02/24 18:12	0.0	77.0	8.	19.0	1004.
02/24 18:18	-1.5	89.8	0.	10.4	1005.
02/24 18:24	-1.8	87.9	0.	9.4	1005.
02/24 18:30	-1.5	84.5	8.	5.4	1005.
02/24 18:36	-1.1	77.2	8.	10.5	1005.
02/24 18:42	-0.7	73.3	8.	12.9	1005.
02/24 18:48	-0.6	73.9	8.	21.4	1004.
02/24 18:54	-0.5	72.6	0.	14.4	1005.
02/24 19:00	-0.9	72.1	8.	15.5	1004.
02/24 19:06	-0.9	78.1	7.	13.3	1004.
02/24 19:12	-0.9	77.2	0.	9.2	1004.
02/24 19:18	-0.6	76.0	0.	8.2	1004.
02/24 19:24	-1.1	79.4	7.	11.5	1005.
02/24 19:30	-1.6	0.2	8.	9.5	1005.
02/24 19:36	-1.1	0.2	7.	4.7	1004.
02/24 19:42	-0.7	0.2	8.	9.3	1004.
02/24 19:48	-0.6	0.2	0.	12.6	1004.
02/24 19:54	-0.6	0.2	8.	8.6	1004.
02/24 20:00	-0.6	0.2	0.	15.2	1004.
02/24 20:06	-0.7	0.2	0.	9.5	1004.
02/24 20:12	-0.6	0.2	0.	7.7	1004.
02/24 20:18	-0.9	0.2	8.	19.8	1004.
02/24 20:24	-1.4	0.2	7.	10.7	1004.
02/24 20:30	-1.2	0.2	8.	5.8	1005.
02/24 20:36	-1.0	0.2	8.	10.4	1004.
02/24 20:42	-0.8	0.2	8.	10.0	1004.
02/24 20:48	-0.7	65.7	0.	16.1	1004.
02/24 20:54	-0.7	67.9	8.	9.0	1005.
02/24 21:00	-0.9	72.1	0.	13.0	1005.
02/24 21:06	-1.0	72.7	0.	9.8	1005.
02/24 21:12	-1.0	75.2	0.	8.8	1005.
02/24 21:18	-1.0	75.0	0.	15.2	1005.
02/24 21:24	-1.4	0.2	0.	15.0	1005.
02/24 21:30	-1.9	0.2	8.	11.2	1005.
02/24 21:36	-1.8	0.2	7.	4.4	1005.
02/24 21:42	-1.5	0.2	8.	15.9	1005.
02/24 21:48	-1.3	0.2	7.	9.8	1005.
02/24 21:54	-1.4	0.2	7.	10.3	1005.
02/24 22:00	-1.3	0.2	0.	10.2	1005.

	TEMP DEG C AVG	RH % AVG	WIND DIR OCT AVG	WIND SPD KTS AVG	BARO PRESS MB INST
02/24 22:06	-1.4	0.2	0.	11.8	1005.
02/24 22:12	-1.3	0.2	0.	8.8	1005.
02/24 22:18	-1.3	0.2	8.	10.8	1005.
02/24 22:24	-1.6	0.2	8.	9.1	1005.
02/24 22:30	-1.4	0.2	8.	11.7	1005.
02/24 22:36	-1.1	0.2	0.	10.1	1005.
02/24 22:42	-1.2	0.2	8.	15.1	1005.
02/24 22:48	-1.3	0.2	7.	7.2	1005.
02/24 22:54	-1.1	0.2	8.	17.2	1005.
02/24 23:00	-1.4	0.2	8.	9.1	1005.
02/24 23:06	-2.2	0.2	0.	7.7	1005.
02/24 23:12	-2.3	0.2	7.	6.1	1005.
02/24 23:18	-2.1	0.2	8.	4.9	1005.
02/24 23:24	-2.0	0.2	8.	10.9	1005.
02/24 23:30	-1.8	0.2	7.	14.4	1005.
02/24 23:36	-1.8	0.2	7.	8.6	1005.
02/24 23:42	-1.8	0.2	7.	4.4	1005.
02/24 23:48	-1.5	0.2	7.	4.9	1005.
02/24 23:54	-1.2	0.2	7.	10.8	1005.
02/25 00:00	-1.4	0.2	7.	11.2	1005.
02/25 00:06	-1.5	0.2	7.	9.2	1005.
02/25 00:12	-1.5	80.8	7.	10.9	1005.
02/25 00:18	-1.2	67.0	0.	7.2	1005.
02/25 00:24	-1.1	64.0	0.	9.7	1005.
02/25 00:30	-1.0	74.0	8.	9.1	1006.
02/25 00:36	-1.0	72.3	7.	11.2	1005.
02/25 00:42	-0.8	64.8	8.	12.6	1006.
02/25 00:48	-0.8	58.9	8.	11.9	1006.
02/25 00:54	-0.8	62.8	8.	10.6	1006.
02/25 01:00	-0.8	64.4	8.	11.6	1006.
02/25 01:06	-0.9	69.7	8.	11.9	1006.
02/25 01:12	-1.1	74.8	0.	5.2	1006.
02/25 01:18	-1.2	75.1	8.	6.0	1006.
02/25 01:24	-1.1	71.6	0.	5.8	1006.
02/25 01:30	-1.0	64.2	0.	7.8	1006.
02/25 01:36	-1.0	63.5	0.	8.4	1006.
02/25 01:42	-1.0	63.2	1.	7.1	1006.
02/25 01:48	-1.0	63.4	0.	5.6	1006.
02/25 01:54	-1.0	59.0	8.	13.9	1006.
02/25 02:00	-0.9	59.4	7.	8.6	1006.
02/25 02:06	-0.8	58.2	0.	8.0	1006.
02/25 02:12	-0.9	60.6	0.	7.3	1006.
02/25 02:18	-0.9	60.3	0.	11.3	1006.
02/25 02:24	-0.8	65.9	8.	10.7	1006.
02/25 02:30	-0.8	68.8	0.	9.9	1006.
02/25 02:36	-0.8	68.6	0.	7.6	1006.
02/25 02:42	-0.9	61.6	0.	10.5	1006.
02/25 02:48	-0.9	58.5	0.	8.2	1006.
02/25 02:54	-1.0	59.4	1.	5.5	1006.
02/25 03:00	-1.0	58.9	0.	5.2	1006.
02/25 03:06	-1.0	60.7	0.	7.8	1006.
02/25 03:12	-1.0	65.1	8.	12.1	1006.
02/25 03:18	-0.9	67.2	0.	8.1	1007.
02/25 03:24	-1.0	68.4	1.	6.4	1007.
02/25 03:30	-1.0	69.1	8.	3.8	1007.
02/25 03:36	-1.0	68.5	8.	7.7	1007.
02/25 03:42	-0.9	68.9	7.	10.8	1007.
02/25 03:48	-0.9	71.7	8.	12.6	1007.
02/25 03:54	-1.2	77.7	1.	9.9	1007.
02/25 04:00	-1.6	84.6	8.	13.1	1007.
02/25 04:06	-1.9	0.2	8.	7.5	1007.
02/25 04:12	-2.0	0.2	8.	7.8	1007.
02/25 04:18	-2.0	0.2	7.	4.7	1007.
02/25 04:24	-1.9	0.2	0.	2.9	1007.
02/25 04:30	-1.9	0.2	0.	3.5	1007.
02/25 04:36	-1.7	0.2	7.	3.5	1007.
02/25 04:42	-1.5	0.2	8.	7.1	1007.
02/25 04:48	-1.2	0.2	8.	6.8	1007.
02/25 04:54	-1.1	0.2	7.	9.7	1007.
02/25 05:00	-1.1	0.2	8.	8.8	1007.
02/25 05:06	-1.0	0.2	7.	6.8	1007.
02/25 05:12	-1.1	0.2	7.	7.9	1007.
02/25 05:18	-1.1	0.2	7.	6.6	1007.
02/25 05:24	-1.0	0.2	8.	[illegible]	1007.
02/25 05:30	-1.1	0.2	7.	8.6	1007.
02/25 05:36	-1.5	0.2	7.	8.2	1007.
02/25 05:42	-2.0	0.2	7.	9.3	1007.
02/25 05:48	-2.0	0.2	7.	4.4	1007.
02/25 05:54	-1.8	0.2	8.	5.9	1007.
02/25 06:00	-1.7	0.2	0.	6.3	1007.
02/25 06:06	-1.6	0.2	8.	5.6	1007.
02/25 06:12	-1.5	0.2	8.	8.9	1007.
02/25 06:18	-1.7	0.2	8.	13.2	1007.
02/25 06:24	-1.8	0.8	0.	9.1	1007.
02/25 06:30	-1.9	1.5	8.	5.6	1007.
02/25 06:36	-1.8	3.2	0.	3.6	1007.
02/25 06:42	-1.6	1.8	8.	9.6	1007.
02/25 06:48	-1.3	7.7	8.	8.6	1007.
02/25 06:54	-1.3	2.9	7.	8.0	1008.
02/25 07:00	-1.5	3.6	0.	4.0	1008.
02/25 07:06	-1.6	2.0	7.	13.2	1008.
02/25 07:12	-1.3	4.7	7.	9.8	1008.
02/25 07:18	-1.3	0.2	8.	11.3	1008.
02/25 07:24	-1.3	0.2	0.	9.7	1008.
02/25 07:30	-1.3	0.2	8.	9.4	1008.
02/25 07:36	-1.2	0.5	8.	7.6	1008.
02/25 07:42	-1.2	71.2	8.	8.0	1008.
02/25 07:48	-1.2	71.7	0.	5.8	1008.
02/25 07:54	-1.2	72.1	0.	3.5	1008.
02/25 08:00	-1.1	76.6	0.	9.8	1008.
02/25 08:06	-1.2	72.6	7.	7.8	1008.
02/25 08:12	-1.2	73.3	8.	13.3	1008.
02/25 08:18	-1.3	74.6	0.	8.6	1008.
02/25 08:24	-1.2	73.1	8.	8.2	1008.
02/25 08:30	-1.1	67.3	8.	9.3	1008.
02/25 08:36	-1.1	67.8	0.	11.8	1008.
02/25 08:42	-1.1	68.3	8.	6.1	1008.
02/25 08:48	-1.1	65.5	8.	6.1	1008.
02/25 08:54	-1.0	62.5	8.	11.2	1008.
02/25 09:00	-1.0	65.7	8.	6.9	1008.
02/25 09:06	-1.0	67.1	7.	10.5	1008.
02/25 09:12	-1.0	71.3	7.	5.6	1008.
02/25 09:18	-1.0	70.8	7.	9.5	1008.
02/25 09:24	-1.0	66.4	8.	8.0	1008.
02/25 09:30	-1.1	63.5	8.	11.7	1008.

02/25 09:36	-1.1	64.0	0.	10.4	1008.
02/25 09:42	-1.0	60.4	0.	8.4	1008.
02/25 09:48	-1.0	61.8	0.	6.3	1009.
02/25 09:54	-1.1	62.8	0.	7.6	1009.
02/25 10:00	-1.1	66.0	0.	7.3	1009.
02/25 10:06	-1.1	67.1	0.	5.8	1009.
02/25 10:12	-0.9	67.8	7.	4.6	1009.
02/25 10:18	-1.0	67.5	8.	8.4	1009.
02/25 10:24	-0.9	61.8	8.	10.8	1009.
02/25 10:30	-0.8	58.2	7.	11.0	1009.
02/25 10:36	-0.8	58.2	7.	9.8	1009.
02/25 10:42	-0.9	59.1	7.	4.5	1009.
02/25 10:48	-0.8	60.0	8.	10.6	1009.
02/25 10:54	-0.8	59.4	8.	7.5	1009.
02/25 11:00	-0.8	62.3	7.	4.6	1009.
02/25 11:06	-0.8	63.8	8.	5.6	1009.
02/25 11:12	-0.9	65.1	0.	7.6	1009.
02/25 11:18	-0.9	64.4	1.	4.2	1009.
02/25 11:24	-0.8	63.8	0.	6.1	1009.
02/25 11:30	-0.7	63.5	0.	5.6	1009.
02/25 11:36	-0.7	63.3	1.	4.1	1009.
02/25 11:42	-0.6	67.7	0.	6.1	1010.
02/25 11:48	-0.6	66.6	0.	3.7	1010.
02/25 11:54	-0.7	66.3	1.	5.1	1010.
02/25 12:00	-0.6	65.6	0.	4.3	1010.
02/25 12:06	-0.5	62.8	0.	7.3	1010.
02/25 12:12	-0.4	64.0	8.	5.3	1010.
02/25 12:18	-0.4	65.0	8.	5.2	1010.
02/25 12:24	-0.5	64.7	0.	7.7	1010.
02/25 12:30	-0.8	75.2	8.	9.4	1010.
02/25 12:36	-1.0	78.4	8.	5.9	1010.
02/25 12:42	-1.0	79.6	0.	4.2	1010.
02/25 12:48	-0.9	79.8	7.	3.7	1010.
02/25 12:54	-0.8	80.0	0.	2.1	1010.
02/25 13:00	-0.6	76.3	0.	4.4	1010.
02/25 13:06	-0.5	71.9	1.	4.1	1010.
02/25 13:12	-0.3	65.3	8.	4.9	1010.
02/25 13:18	-0.1	62.6	0.	4.4	1010.
02/25 13:24	0.1	58.4	0.	8.9	1010.
02/25 13:30	0.1	60.0	7.	8.9	1010.
02/25 13:36	0.1	65.0	0.	5.9	1010.
02/25 13:42	0.0	62.8	0.	6.1	1010.
02/25 13:48	-0.1	67.2	8.	10.6	1010.
02/25 13:54	-0.1	69.1	8.	11.8	1010.
02/25 14:00	-0.1	68.3	0.	5.6	1010.
02/25 14:06	-0.2	73.1	8.	4.6	1011.
02/25 14:12	-0.4	76.9	8.	5.2	1011.
02/25 14:18	-0.9	80.3	8.	9.4	1010.
02/25 14:24	-0.9	80.3	8.	4.3	1011.
02/25 14:30	-0.6	79.0	8.	6.4	1011.
02/25 14:36	-0.5	74.5	7.	7.0	1010.
02/25 14:42	-0.1	73.2	0.	5.1	1010.
02/25 14:48	0.2	67.6	0.	10.6	1010.
02/25 14:54	0.2	65.0	8.	8.2	1010.
02/25 15:00	0.2	65.5	0.	5.2	1010.
02/25 15:06	0.4	66.6	0.	7.4	1010.
02/25 15:12	0.3	63.7	7.	11.1	1011.
02/25 15:18	0.2	62.0	0.	5.7	1010.
02/25 15:24	0.4	61.9	8.	10.9	1011.
02/25 15:30	0.3	59.8	7.	7.9	1010.
02/25 15:36	0.3	57.4	0.	7.2	1010.
02/25 15:42	0.6	58.5	0.	5.3	1010.
02/25 15:48	0.6	55.4	0.	8.0	1010.
02/25 15:54	0.7	53.2	0.	7.1	1010.
02/25 16:00	0.8	63.0	8.	9.5	1010.
02/25 16:06	0.2	67.6	0.	5.2	1010.
02/25 16:12	0.1	71.9	7.	9.1	1010.
02/25 16:18	0.0	72.8	8.	9.1	1010.
02/25 16:24	0.0	63.4	8.	2.1	1013.
02/25 16:30	0.0	60.5	1.	8.4	1013.
02/25 16:36	0.0	64.6	0.	8.7	1013.
02/25 16:42	-0.1	65.4	0.	9.1	1013.
02/25 16:48	-0.1	67.0	1.	8.5	1012.
02/25 16:54	-0.2	67.6	1.	7.8	1013.
02/25 17:00	-0.2	67.9	1.	5.1	1013.
02/25 17:06	-0.2	66.4	1.	5.7	1012.
02/25 17:12	-0.1	63.9	1.	8.9	1012.
02/25 17:18	-0.1	63.0	1.	10.1	1012.
02/25 17:24	-0.1	63.3	0.	5.4	1013.
02/25 17:30	-0.1	64.4	1.	8.0	1012.
02/25 17:36	-0.2	62.7	0.	4.2	1013.
02/25 17:42	-0.2	66.3	0.	4.8	1012.
02/25 17:48	-0.3	64.0	1.	6.6	1012.
02/25 17:54	-0.3	65.8	1.	5.9	1012.
02/25 18:00	-0.2	67.5	1.	6.7	1012.
02/25 18:06	-0.2	68.1	1.	7.2	1013.
02/25 18:12	-0.2	68.7	1.	3.5	1013.
02/25 18:18	-0.3	65.3	2.	4.2	1012.
02/25 18:24	-0.3	64.4	1.	4.5	1013.
02/25 18:30	-0.3	67.1	1.	5.7	1013.
02/25 18:36	-0.3	64.5	1.	5.6	1013.
02/25 18:42	-0.3	66.8	1.	7.0	1013.
02/25 18:48	-0.3	66.6	1.	5.6	1013.
02/25 18:54	-0.3	67.9	1.	7.0	1013.
02/25 19:00	-0.4	62.5	2.	7.7	1013.
02/25 19:06	-0.4	60.2	1.	4.3	1013.
02/25 19:12	-0.5	61.5	1.	5.4	1013.
02/25 19:18	-0.5	63.6	1.	3.6	1013.
02/25 19:24	-0.5	64.8	1.	4.8	1013.
02/25 19:30	-0.5	63.1	0.	5.3	1013.
02/25 19:36	-0.6	64.5	2.	1.8	1013.
02/25 19:42	-0.5	66.3	0.	1.9	1013.
02/25 19:48	-0.6	67.3	1.	1.0	1013.
02/25 19:54	-0.6	69.0	0.	3.0	1013.
02/25 20:00	-0.6	70.0	0.	3.0	1013.
02/25 20:06	-0.6	68.2	1.	3.6	1013.
02/25 20:12	-0.5	69.1	1.	3.9	1013.
02/25 20:18	-0.5	70.3	1.	4.7	1013.
02/25 20:24	-0.4	69.7	1.	7.3	1013.
02/25 20:30	-0.3	70.4	1.	6.1	1013.
02/25 20:36	-0.5	61.8	1.	4.2	1013.
02/25 20:42	-0.4	61.8	2.	7.0	1013.
02/25 20:48	-0.4	62.0	1.	3.1	1013.
02/25 20:54	-0.4	67.9	1.	3.3	1013.
02/25 21:00	-0.4	68.1	1.	5.3	1013.
02/25 21:06	-0.4	68.0	1.	5.8	1013.
02/25 21:12	-0.4	62.8	2.	4.5	1013.
02/25 21:18	-0.3	66.5	2.	4.2	1013.
02/25 21:24	-0.3	63.5	2.	5.7	1013.
02/25 21:30	-0.3	66.7	0.	9.1	1013.

	TEMP DEG C AVG	RH % AVG	WIND DIR OCT AVG	WIND SPD KTS AVG	BARO PRESS MB INST
02/25 21:36	-0.3	66.6	1.	7.7	1013.
02/25 21:42	-0.3	65.2	1.	5.8	1013.
02/25 21:48	-0.3	61.9	2.	8.0	1013.
02/25 21:54	-0.3	62.0	1.	7.5	1013.
02/25 22:00	-0.3	63.1	1.	6.6	1013.
02/25 22:06	-0.2	64.8	1.	4.3	1013.
02/25 22:12	-0.2	66.0	2.	3.6	1013.
02/25 22:18	-0.2	62.6	2.	8.3	1013.
02/25 22:24	-0.2	63.5	2.	6.7	1013.
02/25 22:30	-0.3	62.5	1.	4.8	1013.
02/25 22:36	-0.2	64.3	1.	5.2	1013.
02/25 22:42	-0.1	65.6	1.	8.2	1013.
02/25 22:48	-0.1	63.9	1.	8.5	1013.
02/25 22:54	-0.1	66.1	1.	6.5	1013.
02/25 23:00	-0.2	64.6	2.	7.3	1013.
02/25 23:06	-0.1	63.5	1.	6.1	1013.
02/25 23:12	-0.1	60.7	2.	8.9	1013.
02/25 23:18	-0.1	61.3	3.	4.3	1013.
02/25 23:24	-0.1	62.8	3.	2.8	1013.
02/25 23:30	-0.1	63.6	1.	3.4	1013.
02/25 23:36	-0.1	65.9	2.	2.5	1013.
02/25 23:42	-0.1	65.5	2.	2.7	1013.
02/25 23:48	0.0	63.0	2.	6.6	1013.
02/25 23:54	0.0	60.2	2.	7.2	1013.
02/26 00:00	0.0	60.9	1.	9.5	1013.
02/26 00:06	0.1	60.8	2.	4.6	1013.
02/26 00:12	0.0	63.6	2.	5.6	1013.
02/26 00:18	-0.2	61.9	3.	5.9	1013.
02/26 00:24	-0.2	57.8	3.	2.3	1013.
02/26 00:30	-0.3	57.8	3.	4.1	1013.
02/26 00:36	-0.4	59.0	3.	7.0	1013.
02/26 00:42	-0.3	59.1	3.	2.9	1013.
02/26 00:48	-0.3	59.2	3.	6.3	1013.
02/26 00:54	-0.2	59.0	2.	3.6	1013.
02/26 01:00	0.0	60.5	2.	2.2	1013.
02/26 01:06	-0.1	62.1	3.	4.6	1013.
02/26 01:12	-0.3	62.1	2.	1.2	1013.
02/26 01:18	-0.4	62.7	3.	2.2	1013.
02/26 01:24	-0.5	62.5	3.	1.5	1013.
02/26 01:30	-0.4	62.0	3.	2.0	1012.
02/26 01:36	-0.3	61.7	3.	4.5	1013.
02/26 01:42	-0.2	58.5	3.	5.2	1012.
02/26 01:48	-0.1	58.3	1.	3.5	1012.
02/26 01:54	-0.1	60.3	2.	2.0	1013.
02/26 02:00	-0.2	60.8	3.	5.2	1013.
02/26 02:06	-0.3	61.1	2.	4.2	1012.
02/26 02:12	-0.2	60.5	3.	4.7	1012.
02/26 02:18	-0.3	60.2	3.	5.3	1013.
02/26 02:24	-0.4	59.8	3.	4.6	1013.
02/26 02:30	-0.4	59.9	4.	2.8	1012.
02/26 02:36	-0.5	61.2	3.	2.8	1012.
02/26 02:42	-0.3	58.9	2.	2.9	1013.
02/26 02:48	-0.2	60.3	2.	6.1	1012.
02/26 02:54	-0.2	58.3	3.	2.5	1012.
02/26 03:00	-0.3	57.6	3.	6.7	1012.
02/26 03:06	-0.2	59.1	2.	5.9	1012.
02/26 03:12	-0.1	59.0	2.	3.9	1012.
02/26 03:18	-0.2	59.6	3.	3.5	1012.
02/26 03:24	-0.4	60.6	3.	2.4	1012.
02/26 03:30	-0.5	61.8	4.	3.8	1012.
02/26 03:36	-0.6	61.7	4.	5.0	1012.
02/26 03:42	-0.5	61.9	3.	5.3	1012.
02/26 03:48	-0.5	63.3	3.	4.5	1012.
02/26 03:54	-0.6	62.8	4.	4.0	1012.
02/26 04:00	-0.6	63.7	4.	2.8	1012.
02/26 04:06	-0.7	63.7	4.	3.0	1012.
02/26 04:12	-0.9	66.2	4.	2.5	1012.
02/26 04:18	-0.9	64.8	4.	4.9	1012.
02/26 04:24	-0.7	62.5	4.	3.1	1012.
02/26 04:30	-0.6	62.1	4.	3.4	1012.
02/26 04:36	-0.6	62.2	4.	4.0	1012.
02/26 04:42	-0.6	62.9	4.	3.9	1012.
02/26 04:48	-0.7	64.5	3.	2.5	1011.
02/26 04:54	-0.9	65.7	4.	5.2	1011.
02/26 05:00	-0.4	64.0	3.	2.6	1011.
02/26 05:06	-0.5	63.6	4.	3.6	1011.
02/26 05:12	-0.4	62.8	4.	4.2	1011.
02/26 05:18	-0.4	63.6	4.	4.2	1011.
02/26 05:24	-0.5	64.1	3.	3.3	1011.
02/26 05:30	-0.4	63.4	3.	4.4	1011.
02/26 05:36	-0.3	61.9	2.	3.3	1011.
02/26 05:42	0.0	60.8	3.	3.5	1011.
02/26 05:48	0.2	60.4	2.	4.8	1011.
02/26 05:54	0.1	59.7	3.	8.2	1011.
02/26 06:00	0.0	59.0	3.	7.2	1011.
02/26 06:06	-0.1	58.8	2.	4.4	1011.
02/26 06:12	-0.1	61.2	2.	4.4	1011.
02/26 06:18	0.0	58.5	3.	5.5	1011.
02/26 06:24	0.0	57.6	3.	5.0	1011.
02/26 06:30	0.0	58.4	2.	8.6	1011.
02/26 06:36	0.0	57.7	2.	7.1	1011.
02/26 06:42	0.0	57.8	3.	6.2	1011.
02/26 06:48	-0.1	61.0	3.	4.1	1011.
02/26 06:54	-0.3	58.8	3.	4.7	1011.
02/26 07:00	-0.4	60.1	3.	5.0	1011.
02/26 07:06	-0.2	60.0	3.	2.6	1011.
02/26 07:12	-0.2	59.2	3.	6.8	1011.
02/26 07:18	-0.2	57.9	3.	5.2	1011.
02/26 07:24	-0.1	58.2	3.	4.0	1011.
02/26 07:30	-0.3	58.8	4.	3.8	1011.
02/26 07:36	-0.3	58.4	3.	4.8	1011.
02/26 07:42	-0.3	57.4	3.	8.4	1011.
02/26 07:48	-0.2	55.4	3.	5.2	1011.
02/26 07:54	-0.2	55.7	3.	7.2	1011.
02/26 08:00	-0.2	56.4	3.	8.3	1011.
02/26 08:06	-0.2	57.2	3.	6.7	1011.
02/26 08:12	-0.3	57.6	3.	6.1	1011.
02/26 08:18	-0.2	57.6	3.	6.7	1011.
02/26 08:24	-0.3	58.0	3.	4.4	1011.
02/26 08:30	-0.2	56.7	3.	7.0	1011.
02/26 08:36	-0.2	57.8	3.	10.2	1011.
02/26 08:42	-0.2	57.0	3.	6.9	1011.
02/26 08:48	-0.2	57.4	3.	9.6	1011.
02/26 08:54	-0.2	57.7	3.	5.5	1011.
02/26 09:00	-0.1	56.1	3.	4.5	1011.

02/26 09:06	-0.1	57.6	3.	5.8	1011.
02/26 09:12	-0.1	56.5	3.	5.5	1011.
02/26 09:18	0.0	55.6	2.	7.2	1011.
02/26 09:24	0.1	57.5	3.	6.0	1011.
02/26 09:30	0.0	57.6	3.	6.1	1011.
02/26 09:36	0.0	58.5	4.	3.6	1011.
02/26 09:42	0.0	57.8	3.	5.3	1011.
02/26 09:48	0.1	57.4	3.	7.4	1011.
02/26 09:54	0.1	57.1	3.	6.3	1011.
02/26 10:00	0.2	54.9	3.	3.7	1011.
02/26 10:06	0.2	57.3	3.	7.9	1011.
02/26 10:12	0.3	57.9	3.	4.7	1011.
02/26 10:18	0.4	57.9	3.	2.8	1011.
02/26 10:24	0.3	59.2	1.	7.2	1011.
02/26 10:30	0.3	59.9	2.	3.8	1011.
02/26 10:36	0.5	59.6	2.	6.7	1011.
02/26 10:42	0.4	58.8	2.	5.2	1011.
02/26 10:48	0.5	60.9	3.	5.8	1011.
02/26 10:54	0.4	58.2	3.	4.9	1010.
02/26 11:00	0.4	57.5	3.	5.7	1011.
02/26 11:06	0.4	60.0	3.	4.8	1011.
02/26 11:12	0.5	56.6	3.	5.0	1011.
02/26 11:18	0.5	56.3	3.	6.0	1011.
02/26 11:24	0.5	56.8	3.	5.6	1011.
02/26 11:30	0.5	56.8	3.	4.9	1011.
02/26 11:36	0.6	56.1	3.	2.6	1011.
02/26 11:42	0.6	55.5	3.	8.6	1011.
02/26 11:48	0.6	56.6	3.	6.6	1011.
02/26 11:54	0.6	56.3	3.	6.3	1011.
02/26 12:00	0.6	56.0	3.	7.4	1011.
02/26 12:06	0.7	57.5	2.	3.6	1011.
02/26 12:12	0.7	55.6	3.	5.5	1010.
02/26 12:18	0.7	57.3	2.	4.7	1010.
02/26 12:24	0.7	56.4	3.	6.8	1010.
02/26 12:30	0.8	56.7	3.	4.7	1010.
02/26 12:36	0.8	56.0	2.	6.0	1010.
02/26 12:42	0.8	56.0	4.	3.8	1010.
02/26 12:48	0.8	57.7	3.	6.8	1010.
02/26 12:54	0.9	56.5	3.	4.9	1010.
02/26 13:00	0.8	57.5	2.	3.3	1010.
02/26 13:06	0.8	56.8	3.	7.3	1010.
02/26 13:12	0.9	56.2	3.	4.2	1010.
02/26 13:18	0.9	56.8	3.	6.1	1010.
02/26 13:24	1.1	55.7	3.	4.5	1010.
02/26 13:30	1.0	53.8	3.	3.9	1010.
02/26 13:36	1.1	54.5	3.	3.0	1010.
02/26 13:42	1.1	55.0	3.	5.3	1010.
02/26 13:48	1.1	55.4	2.	3.1	1010.
02/26 13:54	1.1	54.5	3.	4.3	1010.
02/26 14:00	1.1	54.2	2.	5.4	1010.
02/26 14:06	1.3	55.7	3.	6.1	1010.
02/26 14:12	1.2	52.0	2.	7.0	1010.
02/26 14:18	1.2	49.0	2.	7.5	1010.
02/26 14:24	1.3	52.6	3.	5.4	1009.
02/26 14:30	1.6	50.6	3.	6.0	1009.
02/26 14:36	1.7	49.2	3.	7.4	1009.
02/26 14:42	1.8	48.5	3.	6.1	1009.
02/26 14:48	1.7	47.3	2.	6.0	1009.
02/26 14:54	1.5	50.5	1.	6.4	1009.
02/26 15:00	1.5	49.9	1.	8.7	1009.
02/26 15:06	1.4	50.3	1.	4.6	1009.
02/26 15:12	1.5	49.5	2.	3.2	1009.
02/26 15:18	1.4	48.8	1.	7.4	1009.
02/26 15:24	1.5	50.1	3.	6.9	1009.
02/26 15:30	1.4	48.6	3.	6.6	1009.
02/26 15:36	1.4	49.4	2.	8.4	1009.
02/26 15:42	1.5	50.1	3.	4.8	1009.
02/26 15:48	1.4	50.5	2.	4.1	1009.
02/26 15:54	1.4	52.7	2.	5.9	1009.
02/26 16:00	1.5	50.9	3.	3.3	1009.
02/26 16:06	1.4	52.0	2.	5.7	1009.
02/26 16:12	1.4	51.9	3.	7.4	1009.
02/26 16:18	1.3	51.8	2.	6.1	1009.
02/26 16:24	1.3	52.1	2.	5.3	1009.
02/26 16:30	1.4	52.9	2.	6.2	1009.
02/26 16:36	1.3	52.7	2.	4.9	1009.
02/26 16:42	1.4	53.8	2.	4.8	1009.
02/26 16:48	1.4	52.9	2.	6.0	1009.
02/26 16:54	1.3	54.7	2.	5.6	1009.
02/26 17:00	1.4	54.0	2.	5.8	1009.
02/26 17:06	1.3	54.2	2.	3.5	1009.
02/26 17:12	1.3	54.2	2.	2.3	1009.
02/26 17:18	1.3	53.9	2.	3.5	1009.
02/26 17:24	1.3	58.6	1.	10.1	1009.
02/26 17:30	1.1	55.5	2.	4.5	1009.
02/26 17:36	1.1	56.1	2.	8.1	1009.
02/26 17:42	1.1	56.8	2.	5.2	1009.
02/26 17:48	1.1	57.3	2.	5.0	1009.
02/26 17:54	1.1	58.7	2.	5.8	1008.
02/26 18:00	1.1	58.2	2.	7.2	1008.
02/26 18:06	1.1	58.5	2.	3.8	1008.
02/26 18:12	1.0	58.3	2.	7.6	1008.
02/26 18:18	1.0	59.5	3.	7.6	1008.
02/26 18:24	1.0	65.1	2.	5.1	1008.
02/26 18:30	0.9	60.6	2.	7.5	1008.
02/26 18:36	0.9	63.7	2.	6.5	1008.
02/26 18:42	0.8	67.1	3.	4.7	1008.
02/26 18:48	0.8	68.3	3.	5.9	1008.
02/26 18:54	0.7	66.4	2.	2.9	1008.
02/26 19:00	0.6	63.4	3.	6.4	1008.
02/26 19:06	0.6	62.9	3.	8.0	1008.
02/26 19:12	0.6	63.4	3.	4.5	1008.
02/26 19:18	0.6	64.2	3.	4.6	1008.
02/26 19:24	0.6	65.0	3.	8.5	1008.
02/26 19:30	0.6	64.1	2.	9.9	1008.
02/26 19:36	0.5	66.3	3.	4.6	1008.
02/26 19:42	0.6	69.1	3.	5.4	1008.
02/26 19:48	0.7	70.4	3.	7.5	1008.
02/26 19:54	0.6	70.4	3.	9.4	1008.
02/26 20:00	0.5	68.8	3.	4.2	1008.
02/26 20:06	0.6	69.0	2.	5.7	1008.
02/26 20:12	0.6	70.6	3.	13.1	1008.
02/26 20:18	0.6	69.5	3.	12.0	1008.
02/26 20:24	0.6	70.2	3.	7.9	1009.
02/26 20:30	0.6	69.4	3.	7.2	1008.
02/26 20:36	0.6	71.0	3.	5.4	1008.
02/26 20:42	0.6	71.5	3.	5.1	1009.
02/26 20:48	0.6	71.2	3.	3.9	1008.
02/26 20:54	0.6	69.3	3.	8.6	1008.
02/26 21:00	0.6	66.9	3.	5.2	1008.

02/26 21:06	0.7	64.2	3.	10.9	1008.
02/26 21:12	0.8	59.7	2.	6.0	1008.
02/26 21:18	0.9	61.5	3.	10.2	1008.
02/26 21:24	0.9	57.2	2.	4.6	1008.
02/26 21:30	0.9	60.9	1.	9.2	1008.
02/26 21:36	0.9	63.4	2.	7.7	1008.
02/26 21:42	0.8	62.1	2.	10.5	1008.
02/26 21:48	0.8	63.5	2.	11.5	1008.
02/26 21:54	0.8	61.9	2.	8.1	1008.
02/26 22:00	0.9	58.8	2.	13.3	1008.
02/26 22:06	0.9	59.4	2.	11.5	1008.
02/26 22:12	0.8	63.0	2.	9.3	1008.
02/26 22:18	0.8	65.8	2.	5.3	1009.
02/26 22:24	0.8	65.8	2.	10.7	1008.
02/26 22:30	0.8	59.1	3.	12.0	1009.
02/26 22:36	0.7	64.7	2	5.0	1008.
02/26 22:42	0.7	62.1	2.	7.8	1009.
02/26 22:48	0.7	61.2	3.	6.9	1009.
02/26 22:54	0.7	59.4	2.	5.8	1009.
02/26 23:00	0.7	61.7	2.	9.1	1009.
02/26 23:06	0.6	62.4	3.	8.8	1009.
02/26 23:12	0.5	62.9	2.	7.3	1009.
02/26 23:18	0.5	61.0	3.	9.5	1009.
02/26 23:24	0.6	61.5	2.	7.6	1008.
02/26 23:30	0.6	58.8	2.	5.3	1008.
02/26 23:36	0.6	62.1	2.	9.2	1009.
02/26 23:42	0.5	62.7	1.	2.7	1009.
02/26 23:48	0.4	64.4	2.	4.2	1009.
02/26 23:54	0.4	64.1	0.	4.4	1009.

	TEMP DEG C AVG	RH % AVG	WIND DIR OCT AVG	WIND SPD KTS AVG	BARO PRESS MB INST
02/27 00:00	0.4	67.7	2.	5.0	1008.
02/27 00:06	0.3	61.2	2.	10.0	1008.
02/27 00:12	0.4	61.7	2.	7.0	1008.
02/27 00:18	0.4	64.8	1.	7.4	1008.
02/27 00:24	0.3	66.5	2.	6.6	1008.
02/27 00:30	0.2	63.8	2.	10.6	1008.
02/27 00:36	0.2	67.8	3.	11.4	1008.
02/27 00:42	0.1	63.2	2.	6.4	1008.
02/27 00:48	0.1	66.6	1.	4.0	1008.
02/27 00:54	0.1	66.2	3.	2.6	1008.
02/27 01:00	0.1	65.0	2.	8.7	1008.
02/27 01:06	0.1	65.2	2.	7.8	1008.
02/27 01:12	0.1	60.7	3.	10.1	1008.
02/27 01:18	0.1	63.1	2.	7.3	1008.
02/27 01:24	0.2	63.4	2.	8.0	1008.
02/27 01:30	0.2	65.0	1.	6.2	1008.
02/27 01:36	0.1	64.6	1.	10.5	1008.
02/27 01:42	0.1	64.5	2.	9.2	1008.
02/27 01:48	0.1	64.0	2.	8.7	1008.
02/27 01:54	0.0	60.7	1.	10.0	1008.
02/27 02:00	0.1	61.6	1.	10.1	1008.
02/27 02:06	0.0	59.7	2.	8.7	1008.
02/27 02:12	0.0	62.2	1.	5.7	1008.
02/27 02:18	-0.1	60.8	2.	6.0	1008.
02/27 02:24	0.0	62.9	1.	6.4	1008.
02/27 02:30	0.0	59.9	1.	10.1	1008.
02/27 02:36	0.0	59.6	2.	7.6	1008.
02/27 02:42	-0.1	59.8	2.	5.0	1008.
02/27 02:48	-0.1	60.8	1.	9.4	1008.
02/27 02:54	0.0	58.9	1.	10.1	1008.
02/27 03:00	0.0	57.6	1.	11.2	1008.
02/27 03:06	-0.1	57.9	1.	11.0	1008.
02/27 03:12	-0.1	57.7	2.	6.1	1008.
02/27 03:18	-0.1	57.3	1.	12.0	1008.
02/27 03:24	-0.1	59.2	3.	9.1	1008.
02/27 03:30	-0.1	56.1	1.	10.7	1008.
02/27 03:36	-0.3	55.5	2.	5.2	1008.
02/27 03:42	-0.2	55.5	1.	6.0	1008.
02/27 03:48	-0.1	55.6	1.	7.8	1008.
02/27 03:54	-0.1	56.0	2.	6.0	1008.
02/27 04:00	-0.2	54.9	2.	10.2	1008.
02/27 04:06	-0.2	55.1	1.	7.1	1007.
02/27 04:12	-0.2	54.9	2.	8.7	1007.
02/27 04:18	-0.2	54.6	2.	5.3	1007.
02/27 04:24	-0.2	52.9	3.	5.0	1007.
02/27 04:30	-0.3	51.8	2.	8.8	1007.
02/27 04:36	-0.3	53.8	2.	6.8	1007.
02/27 04:42	-0.4	52.2	2.	8.5	1007.
02/27 04:48	-0.2	53.1	2.	5.7	1007.
02/27 04:54	-0.4	51.2	3.	9.8	1007.
02/27 05:00	-0.4	51.7	2.	5.7	1007.
02/27 05:06	-0.3	49.9	2.	10.7	1007.
02/27 05:12	-0.2	49.0	2.	8.1	1007.
02/27 05:18	-0.2	48.2	2.	7.7	1007.
02/27 05:24	-0.2	48.5	2.	8.8	1007.
02/27 05:30	-0.1	50.6	1.	8.5	1007.
02/27 05:36	-0.1	49.2	2.	6.9	1007.
02/27 05:42	-0.1	51.6	2.	6.0	1007.
02/27 05:48	-0.1	55.8	2.	6.9	1007.
02/27 05:54	-0.2	54.0	2.	5.6	1007.
02/27 06:00	-0.1	52.6	2.	4.4	1007.
02/27 06:06	-0.1	53.8	2.	4.6	1007.
02/27 06:12	-0.3	64.8	3.	9.7	1007.
02/27 06:18	-0.7	66.5	3.	9.5	1007.
02/27 06:24	-0.8	63.9	3.	10.9	1007.
02/27 06:30	-0.7	67.2	3.	10.4	1007.
02/27 06:36	-0.7	67.0	2.	6.4	1007.
02/27 06:42	-0.5	63.4	1.	5.3	1007.
02/27 06:48	-0.4	61.7	1.	10.4	1007.
02/27 06:54	-0.4	62.2	2.	5.4	1007.
02/27 07:00	-0.4	62.2	2.	8.0	1007.
02/27 07:06	-0.4	62.1	1.	11.9	1007.
02/27 07:12	-0.4	62.4	2.	4.1	1007.
02/27 07:18	-0.4	61.5	2.	5.3	1007.
02/27 07:24	-0.3	61.2	1.	9.1	1007.
02/27 07:30	-0.4	58.3	1.	12.9	1007.
02/27 07:36	-0.4	57.7	1.	11.7	1007.
02/27 07:42	-0.5	57.3	2.	8.3	1007.
02/27 07:48	-0.5	60.2	3.	8.7	1007.
02/27 07:54	-0.5	62.3	1.	10.0	1007.
02/27 08:00	-0.5	59.6	1.	10.1	1007.
02/27 08:06	-0.5	57.1	2.	9.6	1007.
02/27 08:12	-0.5	57.1	2.	10.8	1007.
02/27 08:18	-0.5	58.5	1.	8.5	1007.
02/27 08:24	-0.5	64.7	2.	8.4	1007.
02/27 08:30	-0.6	58.7	2.	9.0	1007.

02/27 08:36	-0.6	59.9	2.	6.3	1007.
02/27 08:42	-0.7	59.2	2.	6.7	1007.
02/27 08:48	-0.6	62.4	1.	11.6	1007.
02/27 08:54	-0.6	62.3	3.	10.9	1007.
02/27 09:00	-0.7	62.3	2.	11.7	1007.
02/27 09:06	-0.6	63.3	2.	8.3	1007.
02/27 09:12	-0.6	62.0	2.	9.0	1007.
02/27 09:18	-0.6	61.1	2.	7.0	1007.
02/27 09:24	-0.6	67.7	2.	9.8	1007.
02/27 09:30	-1.1	72.2	3.	8.2	1007.
02/27 09:36	-0.9	70.2	3.	14.2	1007.
02/27 09:42	-0.9	67.1	2.	12.0	1007.
02/27 09:48	-0.9	63.1	3.	13.5	1007.
02/27 09:54	-0.8	62.0	2.	11.6	1008.
02/27 10:00	-0.7	64.2	2.	5.4	1008.
02/27 10:06	-0.6	62.2	2.	7.8	1008.
02/27 10:12	-0.5	56.1	3.	6.8	1008.
02/27 10:18	-0.5	56.5	2.	11.0	1008.
02/27 10:24	-0.5	61.2	3.	10.1	1008.
02/27 10:30	-0.6	62.9	3.	8.3	1008.
02/27 10:36	-0.3	52.4	2.	6.4	1008.
02/27 10:42	-0.3	57.2	3.	9.2	1008.
02/27 10:48	-0.6	66.2	2.	6.2	1008.
02/27 10:54	-0.6	65.7	3.	6.9	1008.
02/27 11:00	-0.5	56.7	2.	10.2	1008.
02/27 11:06	-0.3	53.4	2.	5.6	1008.
02/27 11:12	-0.2	54.3	1.	7.6	1008.
02/27 11:18	-0.1	57.7	2.	5.7	1008.
02/27 11:24	0.0	52.8	2.	3.9	1008.
02/27 11:30	-0.2	58.9	2.	11.6	1008.
02/27 11:36	-0.4	59.5	2.	12.4	1008.
02/27 11:42	-0.3	60.7	2.	8.2	1008.
02/27 11:48	-0.2	62.1	2.	6.9	1008.
02/27 11:54	-0.1	58.5	3.	9.0	1008.
02/27 12:00	0.0	56.8	2.	16.0	1008.
02/27 12:06	-0.1	57.4	2.	11.2	1008.
02/27 12:12	0.1	54.7	2.	10.8	1008.
02/27 12:18	-0.1	60.9	1.	15.7	1007.
02/27 12:24	-0.6	69.9	2.	13.0	1008.
02/27 12:30	-0.6	70.1	1.	10.7	1008.
02/27 12:36	-0.7	67.9	3.	9.3	1008.
02/27 12:42	-0.6	66.5	2.	10.1	1008.
02/27 12:48	-0.6	61.2	2.	9.9	1008.
02/27 12:54	-0.6	68.2	3.	5.2	1008.
02/27 13:00	-0.7	70.1	1.	7.6	1008.
02/27 13:06	-0.8	70.9	2.	6.1	1008.
02/27 13:12	-0.7	70.5	2.	7.6	1008.
02/27 13:18	-0.7	69.5	2.	8.2	1008.
02/27 13:24	-0.6	69.7	2.	10.2	1008.
02/27 13:30	-0.5	72.6	2.	8.3	1008.
02/27 13:36	-0.5	66.6	1.	4.8	1007.
02/27 13:42	-0.1	63.9	3.	7.8	1007.
02/27 13:48	-0.3	60.6	2.	9.3	1007.
02/27 13:54	-0.5	60.4	2.	5.9	1007.
02/27 14:00	-0.5	57.7	1.	3.3	1007.
02/27 14:06	-0.3	64.6	1.	9.9	1007.
02/27 14:12	-0.5	60.3	2.	10.1	1007.
02/27 14:18	-0.3	58.7	2.	5.5	1007.
02/27 14:24	-0.4	58.5	1.	9.7	1007.
02/27 14:30	-0.2	54.8	2.	10.0	1007.
02/27 14:36	-0.2	62.2	1.	10.1	1007.
02/27 14:42	-0.4	65.1	2.	15.3	1008.
02/27 14:48	-0.5	61.0	2.	12.2	1007.
02/27 14:54	-0.5	60.8	1.	7.8	1007.
02/27 15:00	-0.6	55.3	2.	5.7	1008.
02/27 15:06	-0.4	63.4	2.	6.9	1007.
02/27 15:12	-0.3	59.1	1.	13.7	1007.
02/27 15:18	-0.3	57.8	1.	7.8	1007.
02/27 15:24	-0.5	57.2	1.	10.4	1007.
02/27 15:30	-0.4	62.9	1.	9.7	1007.
02/27 15:36	-0.7	59.0	2.	15.3	1007.
02/27 15:42	-0.5	64.6	1.	12.5	1007.
02/27 15:48	-0.6	71.9	1.	12.0	1007.
02/27 15:54	-0.5	68.6	1.	11.0	1007.
02/27 16:00	-0.5	70.1	1.	11.4	1007.
02/27 16:06	-0.7	65.1	2.	10.3	1007.
02/27 16:12	-0.8	63.4	1.	8.4	1007.
02/27 16:18	-0.7	62.1	2.	7.6	1007.
02/27 16:24	-0.4	67.4	1.	9.5	1007.
02/27 16:30	-0.5	61.9	2.	5.5	1007.
02/27 16:36	-0.5	61.1	1.	8.7	1007.
02/27 16:42	-0.6	74.2	1.	8.3	1007.
02/27 16:48	-1.0	78.3	1.	13.1	1007.
02/27 16:54	-1.2	76.7	1.	8.5	1007.
02/27 17:00	-1.0	70.0	1.	8.8	1007.
02/27 17:06	-0.8	70.6	1.	8.4	1007.
02/27 17:12	-0.7	75.5	1.	13.4	1007.
02/27 17:18	-1.2	79.9	1.	9.7	1007.
02/27 17:24	-1.2	81.8	1.	12.3	1007.
02/27 17:30	-1.1	83.3	2.	7.1	1007.
02/27 17:36	-1.1	82.2	1.	13.9	1007.
02/27 17:42	-1.3	82.8	1.	7.6	1007.
02/27 17:48	-1.1	78.4	1.	11.6	1007.
02/27 17:54	-0.9	68.3	1.	8.6	1007.
02/27 18:00	-0.8	70.2	1.	8.8	1007.
02/27 18:06	-0.8	68.1	1.	9.6	1007.
02/27 18:12	-0.7	73.7	1.	9.5	1007.
02/27 18:18	-0.8	75.4	1.	12.4	1007.
02/27 18:24	-0.9	72.1	1.	14.6	1007.
02/27 18:30	-0.8	74.6	1.	11.9	1007.
02/27 18:36	-0.9	74.1	1.	11.7	1007.
02/27 18:42	-0.9	70.6	1.	9.3	1007.
02/27 18:48	-0.8	63.7	2.	13.0	1007.
02/27 18:54	-0.7	62.7	1.	8.3	1007.
02/27 19:00	-0.6	58.5	1.	12.0	1007.
02/27 19:06	-0.5	59.4	1.	13.6	1007.
02/27 19:12	-0.5	62.1	1.	12.6	1007.
02/27 19:18	-0.7	70.5	1.	10.1	1007.
02/27 19:24	-0.7	63.1	1.	12.3	1007.
02/27 19:30	-0.7	54.8	2.	7.2	1007.
02/27 19:36	-0.6	63.8	2.	8.9	1007.
02/27 19:42	-0.7	63.8	1.	14.3	1007.
02/27 19:48	-0.7	61.5	3.	8.3	1008.
02/27 19:54	-0.6	64.1	1.	11.2	1007.
02/27 20:00	-0.6	69.4	1.	12.8	1008.
02/27 20:06	-0.7	67.0	1.	7.9	1008.
02/27 20:12	-0.7	66.7	1.	5.8	1008.
02/27 20:18	-0.6	69.3	1.	13.9	1008.
02/27 20:24	-0.7	67.3	1.	10.2	1008.
02/27 20:30	-0.7	69.0	1.	8.5	1008.

02/27 20:36	-0.7	65.1	1.	8.7	1008.
02/27 20:42	-0.7	63.5	1.	11.7	1008.
02/27 20:48	-0.6	61.7	2.	6.7	1008.
02/27 20:54	-0.7	62.4	1.	12.5	1008.
02/27 21:00	-0.8	62.6	1.	10.2	1008.
02/27 21:06	-0.8	60.7	1.	12.0	1008.
02/27 21:12	-0.8	63.5	1.	11.5	1008.
02/27 21:18	-0.8	65.4	1.	9.7	1008.
02/27 21:24	-0.8	65.0	1.	10.1	1008.
02/27 21:30	-0.7	63.3	1.	13.1	1008.
02/27 21:36	-0.8	66.7	1.	7.9	1008.
02/27 21:42	-0.8	65.1	1.	12.1	1008.
02/27 21:48	-0.8	61.6	2.	10.3	1008.
02/27 21:54	-0.9	62.4	1.	15.3	1008.
02/27 22:00	-1.0	61.8	1.	10.1	1008.
02/27 22:06	-0.9	67.4	1.	11.5	1008.
02/27 22:12	-0.9	69.2	1.	7.8	1008.
02/27 22:18	-1.0	67.6	1.	9.4	1008.
02/27 22:24	-1.0	69.8	1.	7.9	1008.
02/27 22:30	-0.9	69.8	1.	6.5	1009.
02/27 22:36	-1.0	69.8	1.	11.7	1008.
02/27 22:42	-0.9	68.7	1.	11.7	1009.
02/27 22:48	-0.9	61.1	1.	14.4	1009.
02/27 22:54	-0.9	62.6	1.	12.5	1009.
02/27 23:00	-1.0	61.9	1.	12.0	1009.
02/27 23:06	-0.9	62.5	1.	12.5	1009.
02/27 23:12	-1.0	60.9	1.	12.8	1009.
02/27 23:18	-1.0	58.7	1.	13.7	1009.
02/27 23:24	-1.1	63.4	1.	9.1	1009.
02/27 23:30	-1.1	59.5	1.	12.7	1008.
02/27 23:36	-1.3	61.4	1.	15.6	1009.
02/27 23:42	-1.2	63.2	0.	13.6	1009.
02/27 23:48	-1.1	63.1	1.	10.7	1009.
02/27 23:54	-1.1	62.1	1.	8.1	1009.

	TEMP DEG C AVG	RH % AVG	BARO PRESS MB INST	WIND DIR DEG AVG	WIND SPD KTS AVG
09/21 00:00	27.2	83.3	1012.	197.	9.2
09/21 00:05	27.1	80.8	1012.	187.	9.8
09/21 00:10	27.2	83.0	1012.	198.	11.1
09/21 00:15	27.1	81.0	1012.	186.	9.5
09/21 00:20	27.2	83.0	1012.	188.	11.4
09/21 00:25	27.1	81.0	1012.	193.	11.0
09/21 00:30	27.2	82.1	1012.	187.	10.3
09/21 00:35	27.2	82.0	1012.	189.	8.9
09/21 00:40	27.2	81.3	1012.	192.	10.2
09/21 00:45	27.3	81.6	1012.	176.	9.0
09/21 00:50	27.3	82.5	1012.	177.	9.6
09/21 00:55	27.3	80.4	1012.	184.	11.0
09/21 01:00	27.3	80.8	1012.	175.	9.9
09/21 01:05	27.3	80.9	1012.	180.	10.3
09/21 01:10	27.3	82.8	1012.	188.	9.6
09/21 01:15	27.3	81.3	1012.	196.	10.3
09/21 01:20	27.3	79.6	1012.	188.	10.3
09/21 01:25	27.3	79.5	1012.	194.	10.9
09/21 01:30	27.3	78.0	1012.	198.	11.8
09/21 01:35	27.4	81.9	1012.	201.	9.0
09/21 01:40	27.3	82.1	1012.	209.	8.9
09/21 01:45	27.2	81.2	1012.	206.	10.3
09/21 01:50	27.2	80.4	1012.	204.	9.2
09/21 01:55	27.3	82.9	1012.	194.	9.2
09/21 02:00	27.2	82.9	1012.	207.	9.1
09/21 02:05	27.2	82.4	1012.	198.	9.1
09/21 02:10	27.2	80.4	1012.	197.	8.8
09/21 02:15	27.3	81.3	1012.	208.	9.8
09/21 02:20	27.2	81.4	1012.	215.	8.3
09/21 02:25	27.2	81.6	1012.	217.	9.4
09/21 02:30	27.3	81.4	1012.	205.	7.0
09/21 02:35	27.3	82.4	1012.	204.	7.3
09/21 02:40	27.2	82.9	1012.	196.	8.5
09/21 02:45	27.2	82.4	1012.	206.	8.9
09/21 02:50	27.3	82.5	1012.	214.	8.8
09/21 02:55	27.3	81.7	1012.	205.	8.2
09/21 03:00	27.3	81.8	1012.	206.	9.3
09/21 03:05	27.2	82.9	1012.	208.	8.7
09/21 03:10	27.2	84.2	1012.	213.	7.0
09/21 03:15	27.2	82.1	1012.	215.	9.0
09/21 03:20	27.2	82.0	1012.	204.	7.1
09/21 03:25	27.2	82.4	1012.	205.	7.2
09/21 03:30	27.2	82.6	1012.	209.	8.3
09/21 03:35	27.2	83.2	1012.	221.	7.8
09/21 03:40	27.2	81.8	1012.	214.	10.7
09/21 03:45	27.2	81.9	1012.	220.	9.5
09/21 03:50	27.2	81.3	1012.	210.	7.4
09/21 03:55	27.3	82.3	1012.	190.	7.8
09/21 04:00	27.2	80.6	1012.	211.	8.1
09/21 04:05	27.2	80.7	1012.	209.	7.8
09/21 04:10	27.3	81.1	1012.	222.	6.3
09/21 04:15	27.2	80.3	1012.	210.	7.8
09/21 04:20	27.3	82.4	1012.	224.	5.9
09/21 04:25	27.2	81.5	1012.	214.	8.8
09/21 04:30	27.2	81.7	1012.	211.	6.6
09/21 04:35	27.3	80.2	1012.	222.	7.2
09/21 04:40	27.3	82.1	1012.	215.	6.0
09/21 04:45	27.3	81.0	1012.	217.	6.7
09/21 04:50	27.2	80.6	1013.	226.	6.7
09/21 04:55	27.2	81.8	1013.	264.	2.0
09/21 05:00	26.9	81.8	1013.	260.	1.9
09/21 05:05	26.7	83.3	1013.	243.	3.0
09/21 05:10	27.0	84.2	1013.	250.	4.2
09/21 05:15	26.8	82.8	1013.	258.	2.3
09/21 05:20	26.9	82.8	1013.	250.	6.8
09/21 05:25	26.7	84.0	1013.	259.	4.0
09/21 05:30	26.4	84.9	1013.	265.	1.7
09/21 05:35	26.8	84.2	1013.	218.	8.6
09/21 05:40	27.2	82.5	1013.	227.	9.1
09/21 05:45	27.3	81.6	1013.	227.	9.7
09/21 05:50	27.3	81.0	1013.	217.	11.9
09/21 05:55	27.3	81.5	1013.	215.	9.2
09/21 06:00	27.3	81.2	1013.	216.	9.6
09/21 06:05	27.3	82.6	1013.	226.	7.9
09/21 06:10	27.3	82.3	1013.	216.	8.4
09/21 06:15	27.3	82.7	1013.	213.	6.9
09/21 06:20	27.3	83.9	1013.	222.	8.5
09/21 06:25	27.2	81.6	1013.	227.	8.6
09/21 06:30	27.0	81.9	1013.	311.	0.0
09/21 06:35	26.6	83.9	1013.	221.	2.9
09/21 06:40	26.4	84.2	1013.	332.	2.3
09/21 06:45	26.0	85.7	1013.	260.	1.4
09/21 06:50	26.3	85.9	1013.	223.	7.0
09/21 06:55	27.0	82.9	1013.	203.	6.7
09/21 07:00	27.2	80.6	1013.	212.	11.0
09/21 07:05	26.8	83.6	1013.	223.	10.9
09/21 07:10	26.3	86.6	1013.	237.	10.1
09/21 07:15	25.9	86.8	1014.	246.	11.4
09/21 07:20	25.6	85.9	1014.	243.	8.8
09/21 07:25	25.6	85.3	1014.	248.	7.6
09/21 07:30	25.8	82.2	1014.	242.	5.2
09/21 07:35	25.9	82.7	1014.	253.	3.9
09/21 07:40	25.8	82.9	1014.	277.	5.0
09/21 07:45	25.8	83.4	1014.	268.	3.9
09/21 07:50	25.8	83.4	1014.	278.	1.9
09/21 07:55	25.8	83.1	1014.	268.	0.6
09/21 08:00	26.1	83.3	1014.	223.	0.3
09/21 08:05	26.2	81.7	1014.	206.	4.0
09/21 08:10	26.4	86.0	1014.	189.	6.3
09/21 08:15	26.1	86.0	1014.	204.	5.2
09/21 08:20	26.2	82.6	1014.	199.	4.4
09/21 08:25	26.5	81.5	1014.	192.	3.8
09/21 08:30	26.8	76.8	1014.	162.	5.5
09/21 08:35	26.9	77.0	1014.	158.	5.4
09/21 08:40	27.1	76.9	1014.	155.	4.6
09/21 08:45	27.3	76.6	1014.	162.	4.9
09/21 08:50	27.3	75.6	1014.	171.	5.4
09/21 08:55	27.4	73.0	1014.	157.	4.4
09/21 09:00	27.4	75.5	1014.	155.	3.8
09/21 09:05	27.4	74.9	1014.	180.	4.3
09/21 09:10	27.5	78.9	1014.	155.	8.7
09/21 09:15	27.3	77.3	1014.	161.	4.2
09/21 09:20	27.3	78.0	1014.	184.	6.0
09/21 09:25	27.3	79.9	1014.	175.	6.7
09/21 09:30	27.4	78.8	1014.	176.	6.1
09/21 09:35	27.4	80.0	1014.	194.	5.2

09/21 09:40	27.3	82.1	1014.	179.	6.4
09/21 09:45	27.0	81.7	1014.	201.	8.5
09/21 09:50	26.8	82.1	1014.	195.	6.5
09/21 09:55	27.0	81.3	1014.	205.	6.2
09/21 10:00	26.9	81.6	1014.	205.	6.0
09/21 10:05	27.0	81.7	1014.	184.	6.2
09/21 10:10	27.0	81.0	1014.	187.	6.3
09/21 10:15	26.9	80.2	1015.	191.	5.0
09/21 10:20	27.0	80.1	1014.	184.	5.4
09/21 10:25	27.1	82.7	1015.	178.	4.9
09/21 10:30	27.2	81.0	1015.	192.	5.0
09/21 10:35	27.1	78.5	1015.	199.	5.8
09/21 10:40	27.2	80.2	1015.	199.	6.2
09/21 10:45	27.4	78.3	1015.	195.	6.1
09/21 10:50	27.4	76.5	1015.	196.	6.3
09/21 10:55	27.5	76.7	1015.	179.	5.3
09/21 11:00	27.5	75.8	1015.	174.	5.6
09/21 11:05	27.5	78.6	1015.	181.	5.5
09/21 11:10	27.6	77.0	1014.	180.	8.5
09/21 11:15	27.7	78.6	1014.	180.	6.4
09/21 11:20	27.7	77.1	1014.	183.	6.7
09/21 11:25	27.7	78.5	1014.	193.	8.1
09/21 11:30	27.8	78.9	1014.	177.	7.9
09/21 11:35	27.6	79.8	1014.	174.	7.5
09/21 11:40	27.7	80.3	1014.	177.	10.5
09/21 11:45	27.7	79.7	1014.	185.	8.4
09/21 11:50	27.8	78.8	1014.	185.	8.1
09/21 11:55	27.8	78.9	1014.	180.	9.4
09/21 12:00	27.9	79.3	1014.	179.	8.8
09/21 12:05	27.9	78.2	1014.	185.	8.2
09/21 12:10	27.9	78.8	1014.	183.	10.3
09/21 12:15	27.9	78.5	1014.	187.	8.9
09/21 12:20	27.9	80.1	1014.	181.	8.2
09/21 12:25	27.8	78.7	1014.	175.	7.3
09/21 12:30	27.8	78.4	1014.	177.	7.6
09/21 12.35	27.8	80.2	1013.	177.	9.4
09/21 12:40	27.7	81.4	1014.	213.	6.9
09/21 12:45	27.7	81.5	1014.	202.	10.7
09/21 12:50	27.7	81.2	1014.	200.	7.0
09/21 12:55	27.5	81.1	1014.	209.	8.1
09/21 13:00	27.7	80.9	1014.	182.	7.6
09/21 13:05	27.7	81.5	1014.	185.	8.4
09/21 13:10	27.6	81.5	1014.	200.	6.6
09/21 13:15	27.5	79.6	1014.	194.	6.6
09/21 13:20	27.5	81.7	1014.	202.	7.7
09/21 13:25	27.6	82.6	1013.	190.	7.2
09/21 13:30	27.7	81.4	1013.	192.	5.7
09/21 13:35	27.9	78.8	1013.	181.	10.5
09/21 13:40	28.0	79.1	1013.	192.	9.3
09/21 13:45	27.9	78.5	1013.	181.	8.8
09/21 13:50	27.8	78.5	1013.	185.	11.3
09/21 13:55	28.0	76.3	1013.	186.	10.2
09/21 14:00	28.1	77.1	1013.	174.	9.6
09/21 14:05	28.0	77.9	1013.	167.	10.3
09/21 14:10	28.0	77.9	1013.	186.	9.9
09/21 14:15	27.9	78.9	1013.	177.	9.9
09/21 14:20	27.9	78.7	1013.	185.	9.6
09/21 14:25	27.9	79.1	1013.	182.	8.5
09/21 14:30	27.9	80.1	1013.	175.	7.2
09/21 14:35	27.8	79.7	1013.	162.	9.7
09/21 14:40	27.9	80.3	1013.	163.	7.1
09/21 14:45	27.9	80.4	1013.	165.	8.6
09/21 14:50	28.0	80.1	1013.	164.	9.6
09/21 14:55	27.9	79.1	1013.	178.	8.4
09/21 15:00	28.0	79.9	1012.	192.	11.4
09/21 15:05	27.9	77.7	1013.	184.	11.9
09/21 15:10	28.0	78.5	1012.	172.	9.5
09/21 15:15	28.0	78.8	1012.	185.	10.3
09/21 15:20	28.0	77.0	1012.	180.	8.0
09/21 15:25	28.0	78.6	1012.	176.	8.9
09/21 15:30	28.0	77.3	1012.	189.	7.6
09/21 15:35	28.0	78.3	1012.	186.	7.8
09/21 15:40	27.8	82.6	1012.	171.	11.4
09/21 15:45	27.7	81.6	1012.	172.	11.3
09/21 15:50	27.7	81.4	1012.	165.	9.8
09/21 15:55	27.7	81.4	1012.	167.	8.2
09/21 16:00	27.8	80.2	1012.	174.	9.8
09/21 16:05	27.7	80.1	1012.	166.	10.0
09/21 16:10	27.7	78.8	1012.	193.	9.4
09/21 16:15	27.8	78.9	1012.	178.	8.6
09/21 16:20	27.8	79.7	1012.	180.	9.7
09/21 16:25	27.8	79.3	1012.	178.	8.1
09/21 16:30	27.8	78.5	1012.	170.	11.6
09/21 16:35	27.8	79.6	1012	183.	8.6
09/21 16:40	27.8	77.9	1012.	189.	8.4
09/21 16:45	27.8	78.1	1012.	194.	9.9
09/21 16:50	27.8	77.9	1012.	182.	10.9
09/21 16:55	27.8	80.4	1012.	183.	9.3
09/21 17:00	27.8	80.2	1012.	192.	8.2
09/21 17:05	27.7	80.7	1012.	188.	9.7
09/21 17:10	27.7	80.0	1012.	187.	7.5
09/21 17:15	27.8	81.8	1012.	179.	9.7
09/21 17:20	27.7	80.0	1012.	184.	7.9
09/21 17:25	27.7	80.1	1012.	182.	8.1
09/21 17:30	27.7	80.3	1012.	191.	7.2
09/21 17:35	27.8	80.6	1012.	185.	10.2
09/21 17:40	27.7	80.1	1012.	189.	9.1
09/21 17:45	27.7	80.6	1012.	190.	7.6
09/21 17:50	27.6	79.7	1012.	179.	8.5
09/21 17:55	27.6	80.6	1012.	188.	9.3
09/21 18:00	27.6	79.6	1012.	180.	10.2
09/21 18:05	27.7	80.2	1012.	182.	8.2
09/21 18:10	27.6	79.2	1012.	183.	9.5
09/21 18:15	27.6	80.7	1012.	172.	8.9
09/21 18:20	27.6	80.0	1012.	168.	8.8
09/21 18:25	27.6	80.3	1012.	176.	9.7
09/21 18:30	27.6	80.7	1012.	172.	9.8
09/21 18:35	27.5	84.6	1012.	169.	10.7
09/21 18:40	27.4	83.6	1013.	161.	10.2
09/21 18:45	27.3	82.8	1013.	157.	9.1
09/21 18:50	27.1	82.5	1013.	168.	9.5
09/21 18:55	27.0	84.3	1013.	166.	10.7
09/21 19:00	27.1	83.7	1013.	170.	11.1
09/21 19:05	27.1	83.7	1013.	172.	9.7
09/21 19:10	27.2	83.5	1013.	168.	10.5
09/21 19:15	27.0	84.3	1013.	166.	10.8
09/21 19:20	26.8	83.0	1013.	185.	6.6
09/21 19:25	26.6	86.0	1013.	139.	7.2
09/21 19:30	26.7	83.8	1013.	150.	7.3
09/21 19:35	26.8	83.4	1013.	152.	5.9

	TEMP DEG C AVG	RH % AVG	BARO PRESS MB INST	WIND DIR DEG AVG	WIND SPD KTS AVG
09/21 19:40	27.0	84.6	1013.	160.	9.1
09/21 19:45	27.0	83.5	1013.	165.	7.5
09/21 19:50	27.4	82.1	1013.	193.	7.4
09/21 19:55	27.6	80.4	1013.	192.	10.4
09/21 20:00	27.7	79.5	1013.	206.	10.5
09/21 20:05	27.7	78.6	1013.	197.	9.7
09/21 20:10	27.7	79.6	1013.	207.	8.0
09/21 20:15	27.6	79.1	1013.	203.	8.3
09/21 20:20	27.6	79.0	1014.	206.	8.4
09/21 20:25	27.7	80.2	1014.	189.	11.3
09/21 20:30	27.7	79.5	1014.	178.	10.5
09/21 20:35	27.6	79.5	1014.	198.	10.2
09/21 20:40	27.6	80.1	1014.	193.	8.9
09/21 20:45	27.6	78.9	1014.	178.	10.9
09/21 20:50	27.7	79.3	1014.	187.	10.4
09/21 20:55	27.7	80.3	1014.	191.	7.5
09/21 21:00	27.7	80.4	1014.	200.	9.6
09/21 21:05	27.6	80.2	1014.	189.	9.0
09/21 21:10	27.6	79.7	1014.	196.	9.7
09/21 21:15	27.6	78.4	1014.	196.	8.8
09/21 21:20	27.6	79.5	1014.	194.	9.8
09/21 21:25	27.6	77.9	1014.	187.	9.4
09/21 21:30	27.7	80.2	1014.	191.	8.5
09/21 21:35	27.6	79.2	1014.	191.	9.1
09/21 21:40	27.6	80.7	1014.	188.	9.6
09/21 21:45	27.6	80.7	1014.	184.	11.6
09/21 21:50	27.6	79.7	1014.	190.	10.0
09/21 21:55	27.6	79.5	1014.	180.	10.5
09/21 22:00	27.6	78.7	1014.	182.	11.6
09/21 22:05	27.6	78.8	1014.	177.	11.2
09/21 22:10	27.6	80.2	1014.	175.	12.3
09/21 22:15	27.6	79.6	1014.	177.	11.0
09/21 22:20	27.6	80.2	1014.	172.	10.5
09/21 22:25	27.6	80.2	1014.	176.	12.7
09/21 22:30	27.6	76.8	1014.	176.	11.2
09/21 22:35	27.6	79.3	1014.	193.	12.1
09/21 22:40	27.5	78.0	1014.	174.	11.7
09/21 22:45	27.6	80.8	1014.	188.	11.7
09/21 22:50	27.5	80.1	1014.	179.	10.9
09/21 22:55	27.5	79.5	1013.	180.	12.4
09/21 23:00	27.5	79.7	1014.	185.	10.5
09/21 23:05	27.5	79.6	1014.	185.	10.5
09/21 23:10	27.5	80.0	1013.	177.	10.5
09/21 23:15	27.5	79.1	1013.	174.	12.1
09/21 23:20	27.5	78.8	1014.	186.	11.3
09/21 23:25	27.4	78.4	1013.	172.	11.2
09/21 23:30	27.4	78.3	1013.	191.	11.7
09/21 23:35	27.5	80.0	1014.	181.	9.9
09/21 23:40	27.5	79.7	1013.	181.	11.5
09/21 23:45	27.4	79.2	1013.	189.	11.0
09/21 23:50	27.4	79.9	1013.	188.	9.8
09/21 23:55	27.4	78.3	1013.	182.	11.0
09/22 00:00	27.4	75.8	1013.	184.	11.5
09/22 00:05	27.5	77.0	1013.	185.	10.6
09/22 00:10	27.5	73.5	1013.	201.	10.1
09/22 00:15	27.5	77.0	1013.	192.	11.0
09/22 00:20	27.5	75.8	1013.	185.	11.0
09/22 00:25	27.5	76.3	1013.	189.	12.3
09/22 00:30	27.4	78.2	1013.	206.	9.7
09/22 00:35	27.4	79.4	1013.	212.	9.8
09/22 00:40	27.3	79.3	1013.	198.	11.0
09/22 00:45	27.3	77.5	1013.	196.	10.4
09/22 00:50	27.3	79.5	1013.	198.	10.8
09/22 00:55	27.3	79.2	1013.	186.	10.6
09/22 01:00	27.3	79.6	1013.	191.	10.0
09/22 01:05	27.3	79.3	1013.	203.	12.6
09/22 01:10	27.3	78.9	1013.	201.	11.0
09/22 01:15	27.3	79.2	1013.	200.	8.7
09/22 01:20	27.3	80.9	1013.	197.	10.0
09/22 01:25	27.3	78.5	1013.	203.	8.8
09/22 01:30	27.3	77.1	1013.	201.	11.9
09/22 01:35	27.3	77.3	1013.	202.	9.2
09/22 01:40	27.3	77.6	1013.	199.	11.1
09/22 01:45	27.3	81.6	1013.	194.	9.5
09/22 01:50	27.3	79.6	1013.	206.	11.5
09/22 01:55	27.3	77.4	1013.	194.	12.0
09/22 02:00	27.3	78.6	1013.	206.	10.9
09/22 02:05	27.3	81.2	1013.	203.	10.8
09/22 02:10	27.2	78.9	1013.	211.	11.7
09/22 02:15	27.2	78.6	1013.	196.	10.7
09/22 02:20	27.3	78.7	1013.	205.	10.7
09/22 02:25	27.3	78.7	1013.	213.	8.9
09/22 02:30	27.3	79.5	1013.	199.	9.4
09/22 02:35	27.3	78.7	1013.	208.	9.8
09/22 02:40	27.2	79.1	1013.	199.	10.4
09/22 02:45	27.2	76.5	1013.	208.	11.2
09/22 02:50	27.3	77.9	1013.	214.	10.3
09/22 02:55	27.3	77.4	1013.	208.	10.0
09/22 03:00	27.2	80.4	1013.	204.	6.9
09/22 03:05	27.3	79.0	1013.	213.	10.4
09/22 03:10	27.4	79.7	1013.	211.	9.5
09/22 03:15	27.3	76.4	1013.	223.	11.1
09/22 03:20	27.4	78.3	1013.	209.	10.8
09/22 03:25	27.4	77.2	1013.	225.	12.2
09/22 03:30	27.4	80.5	1013.	218.	10.4
09/22 03:35	27.3	79.0	1013.	221.	12.1
09/22 03:40	27.3	77.2	1013.	222.	12.0
09/22 03:45	27.3	79.1	1013.	215.	10.2
09/22 03:50	27.3	80.2	1013.	208.	8.8
09/22 03:55	27.3	80.6	1013.	211.	8.9
09/22 04:00	27.3	78.2	1013.	217.	12.4
09/22 04:05	27.3	79.8	1013.	210.	10.1
09/22 04:10	27.3	79.6	1013.	212.	12.2
09/22 04:15	27.3	78.8	1013.	217.	11.0
09/22 04:20	27.3	78.9	1013.	207.	12.5
09/22 04:25	27.3	78.1	1013.	216.	8.9
09/22 04:30	27.2	78.6	1013.	216.	9.6
09/22 04:35	27.3	78.7	1013.	215.	10.1
09/22 04:40	27.3	79.2	1013.	211.	10.6
09/22 04:45	27.3	78.8	1013.	217.	11.7
09/22 04:50	27.3	81.3	1013.	224.	9.2
09/22 04:55	27.3	80.0	1013.	222.	9.9
09/22 05:00	27.3	80.5	1013.	220.	10.4
09/22 05:05	27.3	79.4	1013.	208.	10.4
09/22 05:10	27.3	78.9	1013.	221.	10.4

09/22 05:15	27.2	76.9	1013.	219.	9.3
09/22 05:20	27.3	79.3	1013.	221.	8.6
09/22 05:25	27.2	78.6	1013.	221.	8.5
09/22 05:30	27.2	79.4	1013.	225.	8.4
09/22 05:35	27.2	79.0	1013.	214.	9.4
09/22 05:40	27.2	80.1	1013.	222.	7.6
09/22 05:45	27.2	79.9	1013.	212.	8.7
09/22 05:50	27.2	80.5	1013.	211.	10.2
09/22 05:55	27.2	80.4	1013.	210.	8.2
09/22 06:00	27.2	80.0	1013.	216.	9.0
09/22 06:05	27.2	80.2	1013.	214.	8.6
09/22 06:10	27.2	80.6	1013.	215.	9.7
09/22 06:15	27.2	81.5	1013.	214.	8.7
09/22 06:20	27.2	81.8	1013.	212.	7.4
09/22 06:25	27.2	81.2	1013.	228.	9.7
09/22 06:30	27.2	81.1	1013.	227.	9.7
09/22 06:35	27.2	80.9	1013.	222.	9.6
09/22 06:40	27.2	80.4	1013.	208.	8.3
09/22 06:45	27.2	80.1	1013.	211.	11.0
09/22 06:50	27.2	80.3	1013.	230.	8.6
09/22 06:55	27.2	80.5	1014.	240.	5.9
09/22 07:00	27.0	81.2	1014.	244.	6.7
09/22 07:05	27.2	80.2	1013.	228.	9.0
09/22 07:10	27.3	81.6	1013.	228.	9.7
09/22 07:15	27.3	80.7	1013.	225.	9.5
09/22 07:20	27.3	80.8	1013.	221.	8.5
09/22 07:25	27.3	81.1	1013.	219.	7.8
09/22 07:30	27.3	82.0	1013.	228.	7.4
09/22 07:35	27.3	81.9	1013.	220.	6.7
09/22 07:40	27.4	81.7	1014.	228.	8.2
09/22 07:45	27.3	81.2	1014.	222.	8.7
09/22 07:50	27.4	80.6	1014.	220.	7.2
09/22 07:55	27.5	80.2	1014.	214.	9.1
09/22 08:00	27.5	79.1	1014.	229.	9.7
09/22 08:05	27.5	78.8	1014.	230.	9.0
09/22 08:10	27.5	79.2	1014.	224.	8.2
09/22 08:15	27.6	79.8	1014.	218.	7.4
09/22 08:20	27.5	80.7	1014.	221.	7.1
09/22 08:25	27.5	79.8	1014.	233.	8.8
09/22 08:30	27.5	80.9	1014.	216.	10.2
09/22 08:35	27.6	80.8	1014.	220.	8.8
09/22 08:40	27.7	80.1	1014.	235.	7.9
09/22 08:45	27.6	81.3	1014.	226.	8.5
09/22 08:50	27.7	80.4	1014.	229.	7.8
09/22 08:55	27.7	79.7	1014.	227.	7.8
09/22 09:00	27.7	79.9	1014.	221.	7.5
09/22 09:05	27.6	79.6	1014.	215.	6.9
09/22 09:10	27.8	80.2	1014.	218.	11.8
09/22 09:15	27.8	80.0	1014.	215.	7.5
09/22 09:20	27.8	79.7	1014.	231.	10.1
09/22 09:25	27.8	79.7	1014.	219.	7.6
09/22 09:30	27.9	80.1	1015.	231.	7.8
09/22 09:35	27.9	80.6	1015.	235.	9.3
09/22 09:40	27.8	80.6	1015.	221.	6.9
09/22 09:45	27.8	79.9	1015.	208.	8.4
09/22 09:50	27.8	79.9	1015.	220.	9.8
09/22 09:55	27.9	81.9	1015.	218.	9.5
09/22 10:00	27.9	80.2	1015.	227.	10.2
09/22 10:05	27.8	80.5	1015.	226.	8.8
09/22 10:10	27.9	80.0	1015.	214.	8.7
09/22 10:15	27.9	80.8	1015.	215.	8.9
09/22 10:20	27.9	80.1	1015.	209.	10.3
09/22 10:25	27.9	80.9	1015.	218.	7.7
09/22 10:30	27.9	79.9	1015.	215.	9.5
09/22 10:35	28.0	80.0	1015.	215.	9.4
09/22 10:40	27.9	80.0	1015.	221.	8.8
09/22 10:45	27.9	79.3	1015.	212.	9.3
09/22 10:50	28.0	79.8	1015.	210.	9.5
09/22 10:55	28.0	81.3	1015.	214.	11.6
09/22 11:00	28.0	80.3	1015.	211.	10.6
09/22 11:05	28.0	82.2	1015.	211.	7.8
09/22 11:10	27.9	81.9	1015.	208.	12.5
09/22 11:15	28.0	80.4	1015.	218.	8.5
09/22 11:20	28.0	80.6	1014.	207.	11.2
09/22 11:25	28.0	80.3	1014.	207.	7.5
09/22 11:30	28.0	81.4	1014.	215.	8.6
09/22 11:35	28.0	79.7	1014.	211.	10.0
09/22 11:40	27.9	81.3	1014.	210.	9.2
09/22 11:45	28.0	81.3	1014.	201.	9.5
09/22 11:50	28.0	81.0	1014.	203.	10.6
09/22 11:55	28.0	81.0	1014.	205.	10.3
09/22 12:00	28.1	80.8	1014.	210.	10.6
09/22 12:05	28.0	81.4	1014.	208.	10.6
09/22 12:10	28.0	81.0	1014.	225.	9.3
09/22 12:15	28.1	79.5	1014.	206.	10.2
09/22 12:20	28.1	78.7	1014.	204.	11.6
09/22 12:25	28.1	80.6	1014.	218.	11.2
09/22 12:30	28.1	80.6	1014.	210.	13.7
09/22 12:35	28.1	82.2	1014.	203.	12.6
09/22 12:40	28.1	80.1	1014.	197.	10.3
09/22 12:45	28.2	80.8	1014.	195.	12.0
09/22 12:50	28.1	80.8	1014.	198.	11.7
09/22 12:55	28.1	78.4	1014.	219.	12.4
09/22 13:00	28.2	77.7	1014.	221.	10.0
09/22 13:05	28.2	77.0	1014.	223.	9.8
09/22 13:10	28.2	79.7	1014.	210.	11.4
09/22 13:15	28.3	77.6	1014.	215.	10.6
09/22 13:20	28.4	78.9	1014.	214.	10.2
09/22 13:25	28.4	77.9	1014.	225.	11.7
09/22 13:30	28.3	75.9	1013.	209.	13.6
09/22 13:35	28.4	79.3	1013.	217.	12.0
09/22 13:40	28.3	77.2	1013.	208.	15.3
09/22 13:45	28.3	79.8	1013.	223.	9.8
09/22 13:50	28.3	80.6	1013.	212.	11.7
09/22 13:55	28.3	80.1	1013.	202.	11.1
09/22 14:00	28.4	81.9	1013.	221.	12.0
09/22 14:05	28.3	78.6	1013.	209.	11.0
09/22 14:10	28.3	80.6	1013.	223.	14.2
09/22 14:15	28.3	80.6	1013.	221.	9.7
09/22 14:20	28.3	80.0	1013.	223.	11.1
09/22 14:25	28.4	82.7	1013.	222.	9.8
09/22 14:30	28.3	78.8	1013.	233.	13.9
09/22 14:35	28.4	79.4	1013.	232.	12.4
09/22 14:40	28.4	76.9	1013.	233.	15.2
09/22 14:45	28.5	79.0	1011.	228.	13.0
09/22 14:50	28.4	79.4	1013.	219.	14.5
09/22 14:55	28.4	78.2	1013.	227.	14.0
09/22 15:00	28.4	79.2	1013.	224.	14.4
09/22 15:05	28.5	76.4	1013.	239.	13.7
09/22 15:10	28.4	80.5	1013.	217.	13.0

09/22 15:15	28.4	79.7	1013.	229.	13.9
09/22 15:20	28.4	80.4	1012.	221.	16.5
09/22 15:25	28.3	80.8	1012.	221.	13.5
09/22 15:30	28.3	80.4	1013.	220.	13.5
09/22 15:35	28.4	81.3	1013.	223.	13.0
09/22 15:40	28.5	76.8	1013.	239.	13.4
09/22 15:45	28.5	78.5	1013.	231.	13.4
09/22 15:50	28.5	76.4	1013.	224.	15.6
09/22 15:55	28.6	77.8	1013.	227.	9.0
09/22 16:00	28.6	79.7	1013.	221.	12.4
09/22 16:05	28.6	77.7	1013.	237.	12.1
09/22 16:10	28.6	78.1	1013.	221.	15.8
09/22 16:15	28.6	77.7	1013.	237.	11.8
09/22 16:20	28.5	78.1	1013.	229.	12.9
09/22 16:25	28.5	77.2	1013.	230.	11.0
09/22 16:30	28.4	78.7	1012.	224.	12.0
09/22 16:35	28.4	80.1	1012.	219.	11.8
09/22 16:40	28.4	81.2	1012.	220.	8.9
09/22 16:45	28.4	79.7	1012.	229.	13.2
09/22 16:50	28.4	80.1	1012.	209.	11.0
09/22 16:55	28.4	79.3	1012.	226.	10.9
09/22 17:00	28.4	78.7	1012.	235.	11.7
09/22 17:05	28.4	79.9	1012.	227.	12.7
09/22 17:10	28.3	79.4	1012.	229.	11.3
09/22 17:15	28.4	78.0	1012.	228.	14.1
09/22 17:20	28.4	78.4	1012.	231.	13.2
09/22 17:25	28.4	78.2	1012.	217.	11.7
09/22 17:30	28.3	78.6	1012.	222.	13.5
09/22 17:35	28.3	78.2	1011.	221.	12.0
09/22 17:40	28.2	79.2	1011.	208.	12.8
09/22 17:45	28.2	79.9	1012.	230.	13.2
09/22 17:50	28.2	80.5	1012.	239.	10.9
09/22 17:55	28.1	80.4	1012.	223.	11.2
09/22 18:00	28.1	79.6	1012.	225.	13.7
09/22 18:05	28.1	79.6	1012.	230.	12.1
09/22 18:10	28.1	81.0	1012.	235.	8.2
09/22 18:15	27.9	79.2	1012.	267.	5.5
09/22 18:20	27.8	80.1	1012.	271.	5.2
09/22 18:25	27.8	80.1	1012.	264.	7.3
09/22 18:30	27.7	80.3	1012.	252.	4.9
09/22 18:35	27.7	80.4	1012.	248.	5.3
09/22 18:40	27.6	80.8	1012.	258.	3.4
09/22 18:45	27.7	80.5	1012.	263.	6.2
09/22 18:50	27.7	80.6	1012.	260.	3.9
09/22 18:55	27.6	80.9	1012.	262.	4.5
09/22 19:00	27.6	80.9	1012.	312.	1.8
09/22 19:05	27.5	81.3	1012.	311.	6.2
09/22 19:10	27.1	77.1	1012.	306.	6.5
09/22 19:15	27.0	76.5	1012.	272.	1.4
09/22 19:20	26.9	74.6	1012.	288.	6.4
09/22 19:25	26.9	73.9	1012.	306.	4.3
09/22 19:30	26.8	74.0	1012.	319.	5.1
09/22 19:35	26.8	74.4	1012.	301.	1.9
09/22 19:40	26.7	74.8	1012.	323.	3.0
09/22 19:45	26.5	75.5	1012.	338.	3.4
09/22 19:50	26.4	76.4	1012.	307.	2.9
09/22 19:55	26.3	76.8	1012.	312.	3.8
09/22 20:00	26.2	78.2	1013.	312.	4.0
09/22 20:05	25.9	80.2	1013.	318.	6.5
09/22 20:10	25.7	81.6	1013.	330.	5.6
09/22 20:15	25.5	82.3	1013.	325.	3.8
09/22 20:20	25.4	82.9	1013.	321.	2.4
09/22 20:25	25.3	83.3	1013.	335.	2.9
09/22 20:30	25.2	83.6	1013.	325.	2.6
09/22 20:35	25.1	84.0	1013.	315.	3.2
09/22 20:40	25.0	84.3	1013.	320.	4.9
09/22 20:45	25.0	84.5	1013.	305.	2.5
09/22 20:50	24.9	84.7	1013.	320.	1.7
09/22 20:55	24.9	85.0	1013.	320.	2.6
09/22 21:00	24.8	85.4	1013.	310.	2.4
09/22 21:05	24.7	85.9	1013.	315.	3.2
09/22 21:10	24.7	86.2	1013.	317.	1.9
09/22 21:15	24.6	86.5	1013.	312.	3.5
09/22 21:20	24.6	86.6	1013.	306.	3.9
09/22 21:25	24.6	86.8	1013.	339.	4.1
09/22 21:30	24.5	87.0	1013.	325.	1.3
09/22 21:35	24.5	87.3	1013.	285.	1.6
09/22 21:40	24.4	87.6	1013.	310.	2.1
09/22 21:45	24.4	87.7	1013.	323.	2.1
09/22 21:50	24.4	87.8	1013.	326.	1.5
09/22 21:55	24.3	87.9	1013.	311.	1.4
09/22 22:00	24.3	88.2	1013.	294.	1.7
09/22 22:05	24.2	88.4	1013.	286.	2.0
09/22 22:10	24.1	88.7	1013.	302.	1.8
09/22 22:15	24.1	88.8	1013.	318.	3.3
09/22 22:20	24.0	89.0	1013.	316.	1.1
09/22 22:25	24.0	89.2	1013.	348.	0.9
09/22 22:30	23.9	89.4	1013.	348.	0.0
09/22 22:35	23.9	89.6	1013.	326.	1.5
09/22 22:40	23.8	89.8	1013.	350.	1.8
09/22 22:45	23.8	89.8	1013.	304.	2.4
09/22 22:50	23.8	89.9	1013.	315.	2.9
09/22 22:55	23.8	90.1	1013.	8.	2.6
09/22 23:00	23.7	90.2	1013.	300.	2.5
09/22 23:05	23.7	90.4	1013.	304.	2.3
09/22 23:10	23.6	90.6	1013.	312.	3.2
09/22 23:15	23.6	90.7	1013.	344.	3.2
09/22 23:20	23.6	90.8	1013.	313.	2.9
09/22 23:25	23.6	91.0	1014.	335.	2.6
09/22 23:30	23.5	91.2	1013.	321.	2.0
09/22 23:35	23.5	91.2	1013.	326.	0.7
09/22 23:40	23.5	91.3	1013.	6.	0.4
09/22 23:45	23.4	91.4	1013.	306.	0.0
09/22 23:50	23.4	91.6	1013.	322.	0.8
09/22 23:55	23.4	91.7	1013.	307.	2.6

	TEMP DEG C AVG	RH % AVG	BARO PRESS MB INST	WIND DIR DEG AVG	WIND SPD KTS AVG
09/23 00:00	23.4	91.8	1013.	330.	2.8
09/23 00:05	23.4	91.9	1013.	319.	2.1
09/23 00:10	23.4	91.9	1013.	302.	0.9
09/23 00:15	23.4	92.0	1013.	341.	1.0
09/23 00:20	23.4	92.1	1013.	326.	2.4
09/23 00:25	23.4	92.2	1014.	270.	0.5
09/23 00:30	23.3	92.2	1014.	289.	1.9
09/23 00:35	23.2	92.4	1013.	318.	1.0
09/23 00:40	23.2	92.5	1013.	294.	0.7
09/23 00:45	23.2	92.6	1013.	316.	1.6

09/23 00:50	23.3	92.8	1013.	354.	0.0
09/23 00:55	23.3	93.1	1013.	311.	1.9
09/23 01:00	23.3	93.1	1013.	284.	2.0
09/23 01:05	23.3	93.1	1013.	323.	1.2
09/23 01:10	23.3	93.1	1013.	293.	1.1
09/23 01:15	23.2	93.3	1013.	307.	3.1
09/23 01:20	23.2	93.4	1013.	300.	1.7
09/23 01:25	23.2	93.6	1013.	314.	2.8
09/23 01:30	23.3	93.7	1013.	298.	3.3
09/23 01:35	23.3	93.7	1013.	292.	3.5
09/23 01:40	23.4	93.8	1013.	315.	2.6
09/23 01:45	23.4	93.7	1013.	314.	4.0
09/23 01:50	23.4	93.8	1013.	338.	2.5
09/23 01:55	23.4	93.8	1013.	332.	2.8
09/23 02:00	23.4	93.8	1013.	304.	2.6
09/23 02:05	23.4	93.8	1013.	336.	3.2
09/23 02:10	23.4	93.8	1013.	294.	4.5
09/23 02:15	23.4	93.7	1013.	301.	2.6
09/23 02:20	23.3	93.5	1013.	341.	1.8
09/23 02:25	23.3	93.2	1013.	315.	2.9
09/23 02:30	23.3	93.0	1013.	317.	1.3
09/23 02:35	23.4	92.6	1013.	318.	3.7
09/23 02:40	23.4	92.3	1013.	355.	2.7
09/23 02:45	23.4	92.1	1013.	343.	2.4
09/23 02:50	23.4	91.8	1013.	355.	1.9
09/23 02:55	23.4	91.5	1013.	325.	1.6
09/23 03:00	23.4	91.2	1013.	313.	2.4
09/23 03:05	23.4	90.8	1013.	310.	1.9
09/23 03:10	23.3	90.6	1013.	325.	2.8
09/23 03:15	23.3	90.5	1013.	322.	4.1
09/23 03:20	23.2	90.4	1013.	347.	2.8
09/23 03:25	23.2	90.4	1013.	324.	1.5
09/23 03:30	23.1	90.5	1013.	324.	1.6
09/23 03:35	23.1	90.5	1013.	316.	1.6
09/23 03:40	23.0	90.6	1013.	355.	4.1
09/23 03:45	22.9	90.6	1013.	316.	2.3
09/23 03:50	22.9	90.5	1013.	326.	2.2
09/23 03:55	22.9	90.5	1013.	327.	1.6
09/23 04:00	22.8	90.4	1013.	316.	2.2
09/23 04:05	22.8	90.4	1013.	349.	2.5
09/23 04:10	22.8	90.5	1013.	349.	4.1
09/23 04:15	22.7	90.5	1013.	310.	1.9
09/23 04:20	22.7	90.8	1013.	335.	3.8
09/23 04:25	22.7	90.9	1013.	304.	1.4
09/23 04:30	22.7	91.1	1013.	331.	4.5
09/23 04:35	22.7	91.1	1013.	2.	1.8
09/23 04:40	22.7	91.1	1013.	336.	2.4
09/23 04:45	22.6	91.2	1013.	331.	4.3
09/23 04:50	22.6	91.3	1013.	326.	2.8
09/23 04:55	22.5	91.4	1013.	319.	5.8
09/23 05:00	22.4	91.4	1013.	308.	4.2
09/23 05:05	22.4	91.6	1013.	352.	2.5
09/23 05:10	22.3	91.7	1013.	323.	3.5
09/23 05:15	22.3	91.8	1013.	308.	1.6
09/23 05:20	22.2	92.0	1013.	11.	2.4
09/23 05:25	22.1	92.1	1013.	308.	3.5
09/23 05:30	22.0	92.2	1013.	324.	2.8
09/23 05:35	22.0	92.3	1013.	331.	2.9
09/23 05:40	22.0	92.2	1013.	319.	5.3
09/23 05:45	22.0	92.2	1013.	332.	3.9
09/23 05:50	21.9	92.2	1013.	340.	3.0
09/23 05:55	21.9	92.2	1013.	331.	4.7
09/23 06:00	21.8	92.2	1013.	344.	6.3
09/23 06:05	21.8	92.2	1013.	317.	8.2
09/23 06:10	21.7	92.2	1013.	321.	12.1
09/23 06:15	21.7	92.2	1013.	322.	7.5
09/23 06:20	21.7	92.1	1013.	12.	5.9
09/23 06:25	21.7	92.1	1013.	355.	6.9
09/23 06:30	21.7	92.0	1014.	322.	4.3
09/23 06:35	21.7	92.1	1014.	330.	7.1
09/23 06:40	21.7	92.1	1014.	314.	3.8
09/23 06:45	21.7	92.2	1014.	318.	4.7
09/23 06:50	21.7	92.0	1014.	348.	4.9
09/23 06:55	21.7	92.1	1014.	352.	5.2
09/23 07:00	21.7	92.0	1014.	338.	3.8
09/23 07:05	21.8	91.8	1014.	0.	8.6
09/23 07:10	21.8	91.4	1014.	327.	3.6
09/23 07:15	21.9	91.1	1014.	332.	4.1
09/23 07:20	22.0	90.3	1014.	345.	4.6
09/23 07:25	22.2	89.9	1014.	5.	2.4
09/23 07:30	22.2	89.5	1014.	0.	1.0
09/23 07:35	22.3	89.4	1014.	318.	3.8
09/23 07:40	22.3	89.5	1014.	5.	2.1
09/23 07:45	22.3	89.5	1014.	307.	5.4
09/23 07:50	22.2	89.1	1014.	328.	9.2
09/23 07:55	22.3	88.8	1014.	320.	5.9
09/23 08:00	22.3	88.6	1014.	350.	6.6
09/23 08:05	22.4	88.5	1014.	306.	3.7
09/23 08:10	22.4	88.3	1014.	315.	4.6
09/23 08:15	22.4	88.0	1014.	33.	6.2
09/23 08:20	22.4	87.4	1014.	355.	4.8
09/23 08:25	22.5	87.2	1014.	5.	3.7
09/23 08:30	22.5	87.4	1014.	3.	2.9
09/23 08:35	22.6	87.2	1014.	313.	4.4
09/23 08:40	22.6	86.4	1014.	311.	5.9
09/23 08:45	22.7	85.9	1015.	318.	7.6
09/23 08:50	22.8	85.8	1015.	345.	3.4
09/23 08:55	22.8	85.5	1015.	317.	3.4
09/23 09:00	23.0	84.8	1015.	318.	6.3
09/23 09:05	23.0	84.7	1015.	23.	4.5
09/23 09:10	23.1	84.3	1015.	36.	4.0
09/23 09:15	23.2	84.2	1015.	32.	2.3
09/23 09:20	23.1	84.6	1015.	344.	3.0
09/23 09:25	23.2	83.4	1015.	19.	6.7
09/23 09:30	23.3	83.5	1015.	342.	4.6
09/23 09:35	23.4	82.9	1015.	12.	3.2
09/23 09:40	23.4	83.1	1015.	25.	4.2
09/23 09:45	23.6	82.2	1015.	8.	5.5
09/23 09:50	23.8	80.9	1015.	21.	3.9
09/23 09:55	24.3	79.6	1015.	355.	5.4
09/23 10:00	24.2	79.7	1015.	29.	6.6
09/23 10:05	24.8	78.1	1015.	343.	9.3
09/23 10:10	25.1	77.2	1015.	338.	2.9
09/23 10:15	25.4	74.9	1015.	333.	6.5
09/23 10:20	25.3	75.2	1015.	4.	4.7
09/23 10:25	25.5	74.3	1015.	353.	3.0
09/23 10:30	25.8	73.5	1015.	301.	6.0
09/23 10:35	25.6	74.0	1015.	352.	6.6
09/23 10:40	25.7	73.4	1015.	53.	6.0
09/23 10:45	25.9	73.2	1015.	355.	5.0

09/23 10:50	26.1	72.7	1015.	300.	4.7
09/23 10:55	25.6	74.5	1015.	331.	5.1
09/23 11:00	26.0	71.4	1015.	6.	6.4
09/23 11:05	26.4	69.6	1015.	353.	7.1
09/23 11:10	26.4	70.7	1015.	8.	3.9
09/23 11:15	26.8	69.8	1015.	326.	2.1
09/23 11:20	26.6	67.8	1015.	338.	6.1
09/23 11:25	26.8	68.2	1015.	0.	5.7
09/23 11:30	26.9	67.9	1015.	341.	4.8
09/23 11:35	27.1	67.4	1015.	51.	0.7
09/23 11:40	26.6	70.0	1014.	57.	4.7
09/23 11:45	26.6	71.2	1015.	326.	3.8
09/23 11:50	26.8	69.0	1014.	260.	0.4
09/23 11:55	26.9	68.7	1014.	30.	8.4
09/23 12:00	27.5	65.2	1014.	341.	8.8
09/23 12:05	27.3	67.1	1014.	9.	4.5
09/23 12:10	27.4	66.9	1014.	337.	4.5
09/23 12:15	27.3	66.7	1014.	349.	5.6
09/23 12:20	27.5	66.3	1014.	28.	5.1
09/23 12:25	27.3	66.1	1014.	344.	3.8
09/23 12:30	27.4	66.4	1014.	6.	5.6
09/23 12:35	27.6	66.0	1014.	337.	4.0
09/23 12:40	27.3	66.8	1014.	31.	4.9
09/23 12:45	27.5	65.3	1014.	343.	2.2
09/23 12:50	28.2	62.3	1014.	317.	3.4
09/23 12:55	28.6	61.9	1014.	139.	0.0
09/23 13:00	28.3	63.5	1014.	317.	5.3
09/23 13:05	27.4	66.7	1014.	20.	4.4
09/23 13:10	28.0	63.3	1014.	37.	4.9
09/23 13:15	27.6	63.3	1014.	10.	3.1
09/23 13:20	28.1	61.7	1014.	6.	9.7
09/23 13:25	28.3	61.5	1014.	12.	1.5
09/23 13:30	28.3	62.0	1013.	26.	4.1
09/23 13:35	28.0	63.2	1013.	18.	1.5
09/23 13:40	27.8	65.5	1013.	294.	5.0
09/23 13:45	27.5	66.1	1014.	0.	5.1
09/23 13:50	27.3	65.8	1013.	326.	3.2
09/23 13:55	28.0	63.1	1013.	329.	6.3
09/23 14:00	28.1	61.8	1013.	326.	3.2
09/23 14:05	28.5	61.2	1013.	342.	3.4
09/23 14:10	28.4	62.6	1013.	323.	4.1
09/23 14:15	28.3	63.8	1013.	271.	0.1
09/23 14:20	28.2	63.3	1013.	346.	6.7
09/23 14:25	27.7	64.8	1013.	340.	4.1
09/23 14:30	27.9	62.7	1013.	7.	3.1
09/23 14:35	28.3	60.7	1013.	4.	5.1
09/23 14:40	28.6	61.0	1013.	10.	3.7
09/23 14:45	28.6	60.3	1013.	349.	6.5
09/23 14:50	27.9	62.5	1013.	21.	2.8
09/23 14:55	27.6	62.7	1013.	4.	7.1
09/23 15:00	27.5	63.0	1013.	319.	0.9
09/23 15:05	28.0	60.6	1013.	17.	2.3
09/23 15:10	28.3	61.9	1013.	337.	5.1
09/23 15:15	28.0	65.2	1013.	11.	5.9
09/23 15:20	28.1	64.8	1013.	5.	5.4
09/23 15:25	28.4	62.8	1012.	52.	4.6
09/23 15:30	27.9	64.8	1012.	12.	3.3
09/23 15:35	28.2	62.9	1013.	338.	4.0
09/23 15:40	28.1	64.0	1012.	24.	2.4
09/23 15:45	28.1	63.5	1012.	45.	2.9
09/23 15:50	28.0	62.8	1012.	9.	6.5
09/23 15:55	27.5	64.3	1012.	45.	4.2
09/23 16:00	27.5	65.1	1012.	34.	3.0
09/23 16:05	27.7	65.2	1012.	20.	0.0
09/23 16:10	27.9	63.5	1012.	338.	2.9
09/23 16:15	27.8	64.0	1012.	33.	4.9
09/23 16:20	27.9	64.4	1012.	76.	3.8
09/23 16:25	28.1	62.7	1012.	355.	3.7
09/23 16:30	28.1	62.6	1012.	28.	3.7
09/23 16:35	28.1	63.5	1012.	24.	3.6
09/23 16:40	28.3	62.5	1012.	355.	2.3
09/23 16:45	28.2	61.9	1012.	354.	4.6
09/23 16:50	28.0	63.1	1012.	52.	3.6
09/23 16:55	28.2	60.9	1012.	37.	4.6
09/23 17:00	28.3	58.8	1012.	344.	5.2
09/23 17:05	28.2	59.7	1012.	299.	5.2
09/23 17:10	28.1	60.3	1012.	316.	2.8
09/23 17:15	28.2	60.4	1012.	31.	4.8
09/23 17:20	27.9	62.0	1012.	27.	2.3
09/23 17:25	27.7	63.6	1012.	328.	1.2
09/23 17:30	27.3	64.7	1012.	310.	4.2
09/23 17:35	27.1	65.9	1012.	298.	2.8
09/23 17:40	26.9	65.8	1012.	340.	3.8
09/23 17:45	26.9	65.2	1012.	324.	3.6
09/23 17:50	26.9	65.1	1012.	8.	2.7
09/23 17:55	26.9	65.4	1012.	315.	3.4
09/23 18:00	26.9	66.6	1012.	329.	1.7
09/23 18:05	26.9	67.4	1012.	29.	2.1
09/23 18:10	26.8	68.1	1012.	313.	2.2
09/23 18:15	26.6	69.5	1012.	334.	2.7
09/23 18:20	26.3	70.9	1012.	323.	3.5
09/23 18:25	26.1	72.0	1012.	9.	4.7
09/23 18:30	25.9	72.9	1012.	320.	3.0
09/23 18:35	25.7	73.8	1013.	343.	2.0
09/23 18:40	25.5	74.4	1013.	354.	2.5
09/23 18:45	25.4	74.9	1013.	339.	4.4
09/23 18:50	25.2	75.8	1013.	341.	3.8
09/23 18:55	25.0	76.9	1013.	323.	5.0
09/23 19:00	24.9	77.9	1013.	351.	2.2
09/23 19:05	24.7	78.8	1013.	349.	3.6
09/23 19:10	24.6	79.3	1013.	43.	2.4
09/23 19:15	24.5	79.7	1013.	349.	1.9
09/23 19:20	24.5	79.9	1013.	329.	0.8
09/23 19:25	24.4	80.4	1013.	310.	3.3
09/23 19:30	24.3	80.8	1013.	345.	4.3
09/23 19:35	24.2	81.2	1013.	320.	1.4
09/23 19:40	24.1	81.3	1013.	324.	4.3
09/23 19:45	24.1	80.8	1013.	339.	6.2
09/23 19:50	24.0	80.8	1013.	5.	6.1
09/23 19:55	24.0	81.2	1013.	0.	2.8
09/23 20:00	23.9	81.3	1013.	338.	4.1
09/23 20:05	23.8	81.4	1013.	4.	6.3
09/23 20:10	23.8	81.3	1014.	341.	3.7
09/23 20:15	23.8	81.3	1014.	8.	1.3
09/23 20:20	23.7	81.3	1014.	18.	5.5
09/23 20:25	23.7	81.6	1014.	16.	2.4
09/23 20:30	23.6	81.9	1014.	11.	6.4
09/23 20:35	23.6	82.1	1014.	299.	0.0
09/23 20:40	23.5	82.3	1014.	333.	1.3
09/23 20:45	23.4	82.8	1014.	39.	0.0

	TEMP DEG C AVG	RH % AVG	BARO PRESS MB INST	WIND DIR DEG AVG	WIND SPD KTS AVG
09/23 20:50	23.3	83.3	1014.	349.	2.9
09/23 20:55	23.2	83.6	1014.	7.	1.4
09/23 21:00	23.2	83.6	1014.	325.	3.3
09/23 21:05	23.1	83.9	1014.	305.	3.1
09/23 21:10	23.1	83.9	1014.	325.	3.0
09/23 21:15	23.0	84.2	1014.	355.	0.6
09/23 21:20	23.0	84.2	1014.	354.	3.5
09/23 21:25	22.9	84.0	1014.	0.	3.7
09/23 21:30	22.9	83.6	1014.	345.	2.6
09/23 21:35	22.9	83.5	1014.	334.	5.8
09/23 21:40	22.9	83.6	1015.	51.	2.8
09/23 21:45	22.8	83.6	1015.	11.	2.9
09/23 21:50	22.8	83.8	1015.	11.	4.5
09/23 21:55	22.7	84.0	1015.	31.	3.1
09/23 22:00	22.7	84.4	1015.	0.	8.4
09/23 22:05	22.6	84.5	1015.	26.	4.0
09/23 22:10	22.6	84.7	1015.	75.	2.0
09/23 22:15	22.5	85.0	1015.	24.	3.1
09/23 22:20	22.5	85.2	1015.	355.	4.0
09/23 22:25	22.4	85.5	1015.	355.	4.3
09/23 22:30	22.4	85.7	1015.	320.	2.7
09/23 22:35	22.3	85.9	1015.	355.	5.6
09/23 22:40	22.3	86.1	1015.	354.	6.0
09/23 22:45	22.2	86.3	1015.	330.	4.0
09/23 22:50	22.2	86.6	1015.	335.	4.7
09/23 22:55	22.1	86.7	1015.	16.	2.9
09/23 23:00	22.1	86.8	1015.	345.	3.1
09/23 23:05	22.0	86.8	1015.	352.	3.6
09/23 23:10	22.0	86.9	1015.	6.	3.5
09/23 23:15	22.0	86.9	1015.	345.	5.3
09/23 23:20	21.9	87.0	1015.	8.	9.3
09/23 23:25	21.9	87.1	1015.	334.	4.0
09/23 23:30	21.9	87.2	1015.	330.	6.5
09/23 23:35	21.8	87.4	1015.	355.	3.6
09/23 23:40	21.8	87.5	1015.	14.	5.7
09/23 23:45	21.7	87.5	1015.	353.	3.5
09/23 23:50	21.7	87.6	1015.	4.	3.6
09/23 23:55	21.6	87.8	1015.	338.	3.8
09/24 00:00	21.6	88.0	1015.	334.	2.1
09/24 00:05	21.5	88.2	1015.	305.	1.7
09/24 00:10	21.5	88.2	1015.	355.	4.6
09/24 00:15	21.5	88.2	1015.	15.	2.7
09/24 00:20	21.4	88.1	1015.	336.	3.9
09/24 00:25	21.4	88.3	1014.	17.	5.3
09/24 00:30	21.4	88.3	1015.	355.	1.1
09/24 00:35	21.3	88.5	1014.	314.	4.9
09/24 00:40	21.2	88.7	1014.	342.	3.8
09/24 00:45	21.2	88.7	1014.	20.	2.8
09/24 00:50	21.2	88.6	1014.	347.	6.2
09/24 00:55	21.2	88.5	1014.	11.	4.7
09/24 01:00	21.2	88.6	1014.	15.	5.8
09/24 01:05	21.1	88.5	1014.	325.	6.9
09/24 01:10	21.1	88.6	1014.	5.	7.8
09/24 01:15	21.1	88.6	1014.	344.	6.8
09/24 01:20	21.1	88.7	1014.	347.	3.8
09/24 01:25	21.0	88.7	1014.	5.	5.9
09/24 01:30	21.0	88.8	1014.	7.	6.0
09/24 01:35	21.0	88.8	1014.	345.	6.0
09/24 01:40	20.9	88.9	1014.	346.	2.5
09/24 01:45	20.9	89.0	1014.	341.	4.0
09/24 01:50	20.9	89.1	1014.	345.	2.9
09/24 01:55	20.8	89.1	1014.	6.	3.9
09/24 02:00	20.8	89.2	1014.	354.	6.9
09/24 02:05	20.8	89.2	1014.	354.	1.9
09/24 02:10	20.8	89.3	1014.	27.	4.1
09/24 02:15	20.7	89.3	1014.	348.	4.1
09/24 02:20	20.7	89.3	1014.	6.	5.6
09/24 02:25	20.8	89.3	1014.	3.	5.9
09/24 02:30	20.7	89.2	1014.	348.	2.1
09/24 02:35	20.7	89.1	1014.	26.	4.0
09/24 02:40	20.7	89.1	1014.	11.	3.9
09/24 02:45	20.7	89.2	1013.	354.	5.9
09/24 02:50	20.7	89.2	1013.	334.	6.3
09/24 02:55	20.6	89.2	1013.	12.	9.5
09/24 03:00	20.6	89.3	1013.	6.	5.9
09/24 03:05	20.6	89.4	1013.	353.	8.6
09/24 03:10	20.6	89.4	1013.	353.	6.9
09/24 03:15	20.6	89.4	1013.	14.	4.3
09/24 03:20	20.6	89.5	1013.	11.	5.4
09/24 03:25	20.5	89.5	1013.	350.	5.8
09/24 03:30	20.5	89.4	1013.	21.	1.9
09/24 03:35	20.5	89.4	1013.	5.	4.9
09/24 03:40	20.5	89.3	1014.	13.	2.3
09/24 03:45	20.5	89.5	1013.	352.	5.7
09/24 03:50	20.4	89.7	1013.	355.	3.2
09/24 03:55	20.4	89.8	1014.	325.	2.5
09/24 04:00	20.3	90.2	1014.	7.	3.5
09/24 04:05	20.3	90.3	1014.	306.	1.8
09/24 04:10	20.2	90.4	1014.	355.	6.3
09/24 04:15	20.2	90.4	1014.	339.	2.9
09/24 04:20	20.2	90.4	1013.	338.	4.1
09/24 04:25	20.2	90.5	1014.	333.	6.5
09/24 04:30	20.1	90.6	1014.	324.	5.2
09/24 04:35	20.1	90.7	1014.	347.	2.0
09/24 04:40	20.1	90.7	1014.	335.	3.9
09/24 04:45	20.1	90.7	1014.	345.	7.3
09/24 04:50	20.0	90.8	1014.	15.	5.3
09/24 04:55	20.0	90.9	1014.	13.	6.3
09/24 05:00	20.0	90.9	1014.	11.	3.9
09/24 05:05	20.0	91.0	1014.	16.	5.1
09/24 05:10	20.0	91.1	1014.	15.	5.1
09/24 05:15	20.0	91.1	1014.	19.	2.9
09/24 05:20	20.0	91.1	1014.	10.	3.5
09/24 05:25	19.9	91.2	1014.	36.	2.9
09/24 05:30	19.9	91.3	1014.	351.	2.6
09/24 05:35	19.9	91.3	1014.	24.	3.1
09/24 05:40	19.9	91.4	1014.	0.	3.1
09/24 05:45	19.9	91.3	1014.	329.	2.1
09/24 05:50	19.9	91.3	1014.	44.	4.3
09/24 05:55	19.9	91.2	1014.	5.	1.6
09/24 06:00	19.9	91.2	1014.	6.	2.0
09/24 06:05	19.9	91.1	1014.	26.	2.2
09/24 06:10	19.9	91.3	1014.	40.	2.4
09/24 06:15	19.9	91.3	1014.	41.	2.3
09/24 06:20	19.9	91.4	1014.	8.	2.7

09/24 06:25	19.9	91.4	1014.	35.	5.8
09/24 06:30	19.9	91.5	1014.	354.	3.0
09/24 06:35	20.0	91.5	1014.	13.	4.6
09/24 06:40	20.1	91.4	1014.	15.	4.0
09/24 06:45	20.2	91.3	1014.	12.	3.2
09/24 06:50	20.3	91.2	1014.	20.	1.8
09/24 06:55	20.4	91.1	1014.	46.	2.2
09/24 07:00	20.5	90.9	1014.	8.	3.1
09/24 07:05	20.6	90.9	1014.	17.	4.9
09/24 07:10	20.7	90.7	1014.	322.	2.6
09/24 07:15	20.8	90.6	1014.	24.	3.9
09/24 07:20	20.9	90.6	1014.	341.	1.4
09/24 07:25	20.9	90.5	1014.	7.	2.6
09/24 07:30	21.0	90.4	1014.	3.	1.8
09/24 07:35	21.0	90.3	1015.	19.	4.1
09/24 07:40	21.1	90.3	1015.	2.	2.1
09/24 07:45	21.1	90.1	1015.	31.	3.4
09/24 07:50	21.2	90.2	1015.	24.	1.7
09/24 07:55	21.2	90.1	1015.	13.	3.3
09/24 08:00	21.3	90.2	1015.	352.	3.5
09/24 08:05	21.3	90.2	1015.	26.	3.2
09/24 08:10	21.4	90.2	1015.	44.	2.8
09/24 08:15	21.5	90.1	1015.	3.	3.0
09/24 08:20	21.6	90.2	1015.	351.	4.0
09/24 08:25	21.6	90.0	1015.	17.	2.0
09/24 08:30	21.7	89.8	1015.	48.	2.6
09/24 08:35	21.7	89.9	1015.	43.	1.9
09/24 08:40	21.8	89.7	1015.	341.	3.2
09/24 08:45	21.8	89.9	1015.	346.	3.0
09/24 08:50	21.9	89.4	1015.	15.	3.8
09/24 08:55	21.9	89.3	1015.	42.	2.9
09/24 09:00	22.0	89.4	1015.	26.	1.1
09/24 09:05	22.2	89.0	1015.	7.	7.0
09/24 09:10	22.3	88.9	1015.	41.	2.5
09/24 09:15	22.4	88.7	1015.	49.	2.1
09/24 09:20	22.5	88.8	1015.	87.	8.6
09/24 09:25	22.7	88.8	1015.	58.	6.0
09/24 09:30	22.8	89.1	1015.	82.	4.4
09/24 09:35	22.9	89.2	1015.	60.	3.0
09/24 09:40	23.0	89.0	1015.	67.	7.6
09/24 09:45	23.0	89.0	1015.	71.	6.7
09/24 09:50	23.2	88.4	1015.	17.	4.6
09/24 09:55	23.3	87.9	1015.	56.	6.6
09/24 10:00	23.3	88.5	1015.	64.	6.1
09/24 10:05	23.4	87.8	1015.	349.	5.0
09/24 10:10	23.6	87.7	1016.	60.	3.9
09/24 10:15	23.5	87.9	1016.	32.	5.3
09/24 10:20	23.5	87.8	1016.	60.	4.3
09/24 10:25	23.6	87.8	1016.	56.	3.4
09/24 10:30	23.5	87.6	1016.	55.	5.9
09/24 10:35	23.8	87.1	1016.	83.	3.8
09/24 10:40	23.9	86.8	1016.	79.	3.5
09/24 10:45	24.1	86.1	1016.	74.	3.0
09/24 10:50	24.1	85.8	1016.	28.	4.2
09/24 10:55	24.1	85.9	1016.	55.	3.7
09/24 11:00	24.2	85.2	1016.	60.	7.3
09/24 11:05	24.2	85.6	1016.	27.	6.8
09/24 11:10	24.2	86.0	1016.	34.	2.3
09/24 11:15	24.4	85.3	1016.	42.	3.5
09/24 11:20	24.5	84.4	1016.	55.	4.1
09/24 11:25	24.3	85.2	1016.	62.	5.8
09/24 11:30	24.2	85.7	1016.	41.	4.5
09/24 11:35	24.3	85.7	1016.	351.	2.6
09/24 11:40	24.4	85.3	1016.	60.	1.4
09/24 11:45	24.5	84.9	1016.	37.	3.9
09/24 11:50	24.5	85.1	1016.	45.	2.4
09/24 11:55	24.6	84.7	1016.	18.	1.8
09/24 12:00	24.8	83.9	1016.	57.	2.2
09/24 12:05	24.8	84.1	1016.	65.	5.2
09/24 12:10	24.7	84.1	1016.	76.	2.0
09/24 12:15	24.7	84.2	1016.	60.	4.6
09/24 12:20	24.8	84.3	1016.	34.	3.2
09/24 12:25	25.0	83.8	1016.	39.	2.4
09/24 12:30	25.1	83.4	1016.	76.	4.5
09/24 12:35	25.0	83.6	1016.	41.	4.6
09/24 12:40	25.0	84.2	1016.	11.	2.2
09/24 12:45	25.0	83.9	1016.	80.	2.0
09/24 12:50	25.1	83.6	1015.	347.	2.6
09/24 12:55	25.7	81.8	1015.	37.	2.6
09/24 13:00	26.6	79.0	1015.	262.	0.4
09/24 13:05	26.7	78.3	1015.	133.	0.6
09/24 13:10	26.8	79.0	1015.	135.	0.7
09/24 13:15	27.2	75.6	1015.	28.	4.1
09/24 13:20	27.5	75.3	1015.	90.	0.3
09/24 13:25	27.5	76.5	1015.	136.	1.7
09/24 13:30	27.0	78.6	1015.	129.	4.0
09/24 13:35	27.0	77.8	1015.	126.	3.2
09/24 13:40	27.0	76.4	1015.	122.	6.5
09/24 13:45	26.7	79.6	1015.	132.	4.2
09/24 13:50	26.8	78.6	1015.	131.	2.9
09/24 13:55	26.8	79.6	1015.	130.	4.7
09/24 14:00	26.8	79.5	1015.	129.	4.1
09/24 14:05	26.7	79.4	1014.	106.	4.6
09/24 14:10	26.9	78.8	1014.	69.	2.2
09/24 14:15	26.7	79.6	1014.	123.	3.1
09/24 14:20	26.3	82.6	1014.	101.	4.9
09/24 14:25	26.5	79.5	1014.	77.	7.4
09/24 14:30	26.5	78.8	1014.	26.	7.2
09/24 14:35	26.0	80.9	1014.	0.	6.3
09/24 14:40	26.2	80.3	1015.	75.	6.7
09/24 14:45	26.4	79.7	1014.	32.	4.3
09/24 14:50	26.0	79.4	1014.	35.	11.7
09/24 14:55	25.6	79.6	1014.	79.	12.4
09/24 15:00	25.7	79.4	1015.	74.	9.2
09/24 15:05	25.2	80.5	1014.	53.	5.1
09/24 15:10	25.2	80.5	1014.	44.	6.4
09/24 15:15	25.1	80.8	1014.	17.	11.8
09/24 15:20	25.0	80.6	1014.	62.	6.4
09/24 15:25	25.0	80.4	1014.	55.	6.7
09/24 15:30	24.9	80.7	1014.	33.	9.1
09/24 15:35	24.7	81.2	1014.	70.	5.0
09/24 15:40	24.8	80.4	1014.	40.	7.4
09/24 15:45	24.8	80.6	1014.	46.	4.7
09/24 15:50	24.8	80.4	1014.	64.	8.0
09/24 15:55	24.8	79.6	1014.	56.	11.8
09/24 16:00	24.9	79.7	1014.	48.	6.0
09/24 16:05	25.0	79.2	1014.	61.	7.9
09/24 16:10	25.0	78.7	1014.	55.	12.0
09/24 16:15	25.1	77.7	1014.	48.	11.1
09/24 16:20	24.9	78.8	1014.	61.	13.2

09/24 16:25	24.6	79.2	1014.	46.	11.2
09/24 16:30	24.4	79.4	1014.	31.	11.9
09/24 16:35	24.3	79.9	1014.	46.	9.1
09/24 16:40	24.3	79.4	1014.	50.	11.2
09/24 16:45	24.3	79.4	1014.	39.	5.7
09/24 16:50	24.2	79.7	1015.	24.	6.6
09/24 16:55	24.3	79.7	1015.	53.	5.1
09/24 17:00	24.2	79.2	1015.	61.	6.0
09/24 17:05	24.2	79.1	1015.	69.	6.7
09/24 17:10	24.2	79.4	1015.	59.	6.6
09/24 17:15	24.0	79.8	1015.	52.	6.0
09/24 17:20	23.9	80.2	1015.	77.	4.3
09/24 17:25	23.8	80.5	1015.	28.	7.2
09/24 17:30	23.6	80.3	1015.	30.	3.0
09/24 17:35	23.5	79.9	1015.	30.	5.7
09/24 17:40	23.5	80.0	1015.	34.	8.0
09/24 17:45	23.4	80.2	1015.	56.	6.7
09/24 17:50	23.3	79.7	1015.	43.	7.5
09/24 17:55	23.2	80.1	1015.	28.	7.5
09/24 18:00	23.1	79.9	1015.	17.	6.9
09/24 18:05	23.1	79.9	1015.	58.	8.8
09/24 18:10	23.0	79.8	1015.	69.	8.4
09/24 18:15	22.9	80.1	1015.	71.	7.5
09/24 18:20	22.9	80.2	1015.	77.	7.5
09/24 18:25	22.9	80.4	1015.	69.	7.4
09/24 18:30	22.9	80.2	1015.	76.	9.2
09/24 18:35	22.7	80.8	1015.	40.	5.9
09/24 18:40	22.6	80.8	1015.	54.	6.3
09/24 18:45	22.6	81.0	1015.	47.	5.2
09/24 18:50	22.5	81.2	1015.	39.	9.1
09/24 18:55	22.4	81.1	1015.	35.	7.7
09/24 19:00	22.3	81.3	1015.	22.	8.7
09/24 19:05	22.1	81.5	1015.	51.	6.3
09/24 19:10	22.0	81.6	1015.	54.	6.5
09/24 19:15	21.9	82.1	1015.	52.	5.4
09/24 19:20	21.8	82.5	1015.	27.	4.8
09/24 19:25	21.8	82.8	1015.	76.	7.5
09/24 19:30	21.7	82.7	1015.	57.	7.5
09/24 19:35	21.8	82.7	1015.	76.	7.4
09/24 19:40	21.7	82.7	1015.	77.	6.0
09/24 19:45	21.7	83.1	1015.	65.	10.7
09/24 19:50	21.7	82.6	1015.	28.	9.3
09/24 19:55	21.5	82.5	1015.	62.	8.1
09/24 20:00	21.3	82.8	1015.	57.	8.6
09/24 20:05	21.3	83.2	1016.	64.	6.7
09/24 20:10	21.2	83.2	1016.	49.	5.1
09/24 20:15	21.1	83.4	1016.	52.	8.4
09/24 20:20	21.1	83.3	1016.	50.	7.1
09/24 20:25	21.0	83.4	1016.	55.	6.1
09/24 20:30	20.9	83.4	1016.	51.	6.9
09/24 20:35	20.8	83.6	1016.	56.	9.6
09/24 20:40	20.8	83.7	1016.	21.	10.0
09/24 20:45	20.8	84.0	1016.	48.	8.7
09/24 20:50	20.7	83.4	1016.	51.	8.6
09/24 20:55	20.7	83.7	1016.	77.	6.1
09/24 21:00	20.7	83.3	1016.	54.	8.1
09/24 21:05	20.7	83.2	1016.	61.	9.4
09/24 21:10	20.6	83.4	1016.	49.	10.6
09/24 21:15	20.5	83.7	1016.	46.	7.6
09/24 21:20	20.4	84.0	1016.	28.	7.6
09/24 21:25	20.4	83.7	1016.	35.	14.3
09/24 21:30	20.4	83.7	1016.	69.	8.0
09/24 21:35	20.4	83.7	1016.	61.	9.1
09/24 21:40	20.3	83.9	1016.	88.	9.7
09/24 21:45	20.3	84.0	1016.	67.	11.2
09/24 21:50	20.2	83.8	1016.	51.	10.5
09/24 21:55	20.2	84.2	1016.	77.	13.1
09/24 22:00	20.2	84.6	1016.	63.	13.0
09/24 22:05	20.2	84.3	1017.	42.	10.5
09/24 22:10	20.1	84.2	1017.	72.	9.2
09/24 22:15	20.1	84.5	1017.	73.	7.6
09/24 22:20	20.1	84.5	1017.	76.	12.2
09/24 22:25	20.2	84.4	1017.	85.	7.8
09/24 22:30	20.1	84.4	1017.	71.	9.4
09/24 22:35	20.1	84.7	1017.	47.	13.1
09/24 22:40	20.0	84.8	1017.	67.	11.2
09/24 22:45	20.0	85.1	1017.	54.	8.3
09/24 22:50	20.0	84.7	1017.	58.	16.5
09/24 22:55	19.9	84.9	1017.	46.	13.1
09/24 23:00	19.9	84.7	1017.	63.	8.4
09/24 23:05	19.8	84.8	1017.	62.	8.1
09/24 23:10	19.8	85.2	1017.	79.	6.8
09/24 23:15	19.7	85.3	1017.	38.	12.6
09/24 23:20	19.6	85.6	1017.	67.	7.1
09/24 23:25	19.6	85.7	1017.	59.	14.2
09/24 23:30	19.6	85.5	1017.	49.	14.1
09/24 23:35	19.6	85.3	1017.	55.	15.8
09/24 23:40	19.6	85.4	1017.	80.	13.7
09/24 23:45	19.7	85.6	1017.	87.	11.0
09/24 23:50	19.8	86.1	1017.	84.	9.7
09/24 23:55	19.7	85.6	1017.	78.	11.3

	TEMP DEG C AVG	RH % AVG	BARO PRESS MB INST	WIND DIR DEG AVG	WIND SPD KTS AVG
09/27 00:00	22.9	91.5	1015.	26.	8.0
09/27 00:05	23.0	91.5	1015.	60.	8.7
09/27 00:10	23.0	91.4	1015.	45.	4.3
09/27 00:15	23.0	91.4	1015.	33.	4.6
09/27 00:20	23.1	91.2	1015.	19.	5.1
09/27 00:25	23.1	91.2	1015.	43.	4.4
09/27 00:30	23.0	91.0	1015.	36.	6.3
09/27 00:35	23.0	90.9	1015.	39.	4.1
09/27 00:40	23.0	90.9	1015.	48.	4.4
09/27 00:45	23.0	90.8	1015.	67.	6.5
09/27 00:50	23.0	90.9	1015.	37.	3.0
09/27 00:55	23.0	91.0	1015.	48.	3.5
09/27 01:00	23.0	91.0	1015.	37.	3.8
09/27 01:05	23.0	91.1	1015.	59.	7.2
09/27 01:10	23.0	91.0	1015.	46.	4.6
09/27 01:15	23.0	91.1	1015.	46.	3.0
09/27 01:20	23.0	91.2	1015.	66.	3.7
09/27 01:25	23.0	91.1	1015.	60.	6.5
09/27 01:30	23.0	91.1	1015.	58.	4.8
09/27 01:35	23.0	91.2	1015.	61.	7.0
09/27 01:40	23.0	91.2	1015.	67.	7.2
09/27 01:45	23.0	91.2	1015.	40.	3.9
09/27 01:50	23.0	91.1	1015.	38.	9.6
09/27 01:55	23.0	91.1	1015.	53.	5.8

09/27 02:00	23.0	91.2	1015.	37.	4.6
09/27 02:05	23.0	91.3	1015.	53.	5.6
09/27 02:10	23.0	91.5	1015.	54.	5.3
09/27 02:15	23.0	91.6	1015.	59.	7.1
09/27 02:20	23.0	91.6	1014.	54.	4.6
09/27 02:25	23.0	91.5	1014.	16.	5.2
09/27 02:30	23.0	91.5	1014.	39.	2.9
09/27 02:35	22.9	91.5	1014.	36.	4.7
09/27 02:40	22.9	91.5	1014.	56.	6.1
09/27 02:45	22.9	91.4	1014.	33.	7.1
09/27 02:50	22.8	91.5	1014.	33.	4.1
09/27 02:55	22.8	91.5	1014.	40.	4.6
09/27 03:00	22.8	91.5	1014.	48.	5.3
09/27 03:05	22.8	91.5	1014.	37.	3.4
09/27 03:10	22.8	91.4	1014.	49.	5.6
09/27 03:15	22.8	91.4	1014.	24.	3.0
09/27 03:20	22.8	91.3	1014.	24.	4.8
09/27 03:25	22.8	91.2	1014.	50.	3.9
09/27 03:30	22.8	91.2	1014.	63.	7.7
09/27 03:35	22.8	91.2	1014.	42.	3.5
09/27 03:40	22.8	91.2	1014.	33.	2.2
09/27 03:45	22.8	91.3	1014.	57.	5.4
09/27 03:50	22.8	91.4	1014.	53.	4.3
09/27 03:55	22.8	91.4	1014.	34.	4.9
09/27 04:00	22.8	91.5	1014.	54.	4.4
09/27 04:05	22.8	91.6	1014.	24.	3.6
09/27 04:10	22.8	91.6	1014.	44.	4.7
09/27 04:15	22.8	91.6	1014.	57.	2.9
09/27 04:20	22.8	91.5	1014.	35.	4.6
09/27 04:25	22.8	91.5	1014.	10.	5.5
09/27 04:30	22.8	91.6	1014.	39.	4.4
09/27 04:35	22.7	91.7	1014.	28.	3.7
09/27 04:40	22.7	91.7	1014.	50.	2.3
09/27 04:45	22.7	91.8	1014.	47.	4.2
09/27 04:50	22.7	91.8	1014.	18.	3.3
09/27 04:55	22.7	91.8	1015.	32.	3.2
09/27 05:00	22.7	91.9	1015.	26.	2.6
09/27 05:05	22.7	91.9	1014.	25.	4.2
09/27 05:10	22.6	92.0	1014.	31.	5.4
09/27 05:15	22.6	92.1	1014.	27.	5.3
09/27 05:20	22.6	92.1	1014.	53.	3.5
09/27 05:25	22.5	92.1	1014.	65.	2.3
09/27 05:30	22.5	92.2	1014.	29.	4.8
09/27 05:35	22.5	92.2	1014.	35.	3.3
09/27 05:40	22.5	92.3	1014.	42.	4.6
09/27 05:45	22.5	92.4	1014.	29.	6.8
09/27 05:50	22.5	92.4	1014.	27.	6.2
09/27 05:55	22.5	92.4	1014.	51.	3.4
09/27 06:00	22.5	92.4	1014.	38.	4.1
09/27 06:05	22.5	92.3	1014.	25.	4.6
09/27 06:10	22.5	92.4	1014.	40.	6.0
09/27 06:15	22.5	92.5	1014.	42.	4.8
09/27 06:20	22.5	92.5	1015.	41.	4.1
09/27 06:25	22.5	92.5	1014.	28.	8.2
09/27 06:30	22.5	92.6	1015.	24.	5.1
09/27 06:35	22.5	92.6	1015.	0.	4.5
09/27 06:40	22.5	92.6	1015.	45.	4.9
09/27 06:45	22.5	92.7	1015.	48.	5.5
09/27 06:50	22.5	92.7	1015.	26.	5.0
09/27 06:55	22.5	92.7	1015.	42.	6.8

09/27 07:00	22.5	92.7	1015.	49.	3.1
09/27 07:05	22.5	92.7	1015.	28.	3.4
09/27 07:10	22.6	92.7	1015.	48.	6.2
09/27 07:15	22.6	92.6	1015.	43.	6.0
09/27 07:20	22.6	92.7	1015.	4.	2.0
09/27 07:25	22.6	92.5	1015.	0.	5.8
09/27 07:30	22.6	92.5	1015.	44.	6.0
09/27 07:35	22.7	92.3	1015.	7.	4.4
09/27 07:40	22.7	92.2	1015.	57.	7.8
09/27 07:45	22.8	92.0	1015.	44.	5.3
09/27 07:50	22.8	91.9	1015.	45.	4.2
09/27 07:55	22.9	91.7	1015.	50.	5.8
09/27 08:00	23.0	91.3	1015.	31.	6.0
09/27 08:05	23.0	91.2	1015.	28.	6.2
09/27 08:10	23.1	91.1	1015.	71.	4.5
09/27 08:15	23.1	90.9	1015.	48.	6.1
09/27 08:20	23.1	90.9	1015.	44.	3.2
09/27 08:25	23.1	90.7	1015.	35.	7.4
09/27 08:30	23.1	90.7	1015.	17.	6.7
09/27 08:35	23.1	90.8	1015.	55.	4.2
09/27 08:40	23.2	90.7	1015.	12.	1.7
09/27 08:45	23.1	90.6	1015.	9.	3.6
09/27 08:50	23.1	90.6	1015.	48.	4.6
09/27 08:55	23.2	90.6	1016.	38.	1.3
09/27 09:00	23.2	90.5	1016.	74.	3.3
09/27 09:05	23.2	90.5	1016.	43.	4.4
09/27 09:10	23.3	90.5	1016.	48.	4.4
09/27 09:15	23.2	90.5	1016.	64.	4.3
09/27 09:20	23.2	90.4	1016.	40.	5.5
09/27 09:25	23.2	90.5	1016.	62.	5.1
09/27 09:30	23.2	90.6	1016.	36.	4.4
09/27 09:35	23.1	90.7	1016.	25.	4.7
09/27 09:40	23.1	90.7	1016.	68.	7.2
09/27 09:45	23.1	90.8	1016.	30.	4.7
09/27 09:50	23.0	90.7	1016.	18.	5.9
09/27 09:55	23.1	90.8	1016.	335.	3.5
09/27 10:00	23.1	90.9	1016.	14.	5.1
09/27 10:05	23.1	91.0	1016.	35.	4.2
09/27 10:10	23.1	91.0	1016.	56.	2.6
09/27 10:15	23.1	90.7	1016.	40.	6.9
09/27 10:20	23.2	90.7	1016.	43.	2.6
09/27 10:25	23.2	90.7	1016.	30.	2.3
09/27 10:30	23.2	90.6	1016.	62.	3.5
09/27 10:35	23.2	90.3	1016.	19.	5.6
09/27 10:40	23.3	90.5	1016.	219.	2.1
09/27 10:45	23.4	89.9	1016.	34.	6.5
09/27 10:50	23.4	89.6	1016.	42.	4.5
09/27 10:55	23.6	89.2	1016.	5.	8.2
09/27 11:00	23.7	88.5	1016.	48.	8.7
09/27 11:05	23.8	88.0	1016.	43.	9.7
09/27 11:10	24.1	88.1	1016.	48.	5.4
09/27 11:15	24.5	85.8	1016.	70.	7.8
09/27 11:20	24.6	85.4	1016.	18.	6.3
09/27 11:25	24.7	85.3	1016.	26.	4.4
09/27 11:30	24.5	85.5	1016.	47.	4.8
09/27 11:35	24.4	85.9	1016.	71.	3.9
09/27 11:40	24.5	85.5	1016.	8.	3.6
09/27 11:45	24.7	85.2	1016.	39.	4.5
09/27 11:50	24.8	84.7	1016.	18.	4.7
09/27 11:55	24.9	84.6	1016.	33.	4.7

Weather Data From Pensacola, FL (9/21/92-9/28/92)

09/27 12:00	25.0	84.3	1016.	50.	6.0
09/27 12:05	25.1	84.4	1016.	72.	9.1
09/27 12:10	25.0	84.7	1016.	36.	5.1
09/27 12:15	25.2	83.8	1015.	52.	6.2
09/27 12:20	25.5	82.8	1015.	50.	5.8
09/27 12:25	25.3	83.8	1015.	64.	3.8
09/27 12:30	25.4	83.1	1015.	19.	2.6
09/27 12:35	25.5	83.1	1015.	27.	4.5
09/27 12:40	25.3	82.9	1015.	12.	1.5
09/27 12:45	25.5	83.0	1015.	28.	7.1
09/27 12:50	25.6	82.4	1015.	51.	3.8
09/27 12:55	25.8	81.7	1015.	43.	6.7
09/27 13:00	25.9	81.7	1015.	55.	3.5
09/27 13:05	26.1	81.2	1015.	23.	6.3
09/27 13:10	26.1	81.1	1015.	17.	1.9
09/27 13:15	26.1	80.5	1015.	12.	5.2
09/27 13:20	26.0	80.9	1015.	50.	5.2
09/27 13:25	26.0	80.8	1015.	38.	8.0
09/27 13:30	25.9	81.3	1015.	33.	5.9
09/27 13:35	25.9	81.3	1015.	337.	2.5
09/27 13:40	25.8	81.7	1015.	57.	5.8
09/27 13:45	25.7	82.2	1015.	44.	3.9
09/27 13:50	25.6	83.0	1015.	49.	2.5
09/27 13:55	25.4	83.0	1015.	41.	7.2
09/27 14:00	25.4	83.4	1015.	7.	3.8
09/27 14:05	25.4	83.5	1015.	43.	3.2
09/27 14:10	25.3	83.7	1015.	61.	5.7
09/27 14:15	25.2	84.1	1015.	47.	5.8
09/27 14:20	25.1	84.6	1015.	51.	3.6
09/27 14:25	25.1	85.0	1015.	49.	3.6
09/27 14:30	25.0	85.6	1015.	42.	3.4
09/27 14:35	25.0	85.7	1014.	9.	2.1
09/27 14:40	25.0	85.4	1014.	20.	3.2
09/27 14:45	25.1	85.0	1014.	35.	5.8
09/27 14:50	25.1	84.4	1014.	51.	7.5
09/27 14:55	25.2	84.5	1014.	62.	4.1
09/27 15:00	25.2	84.1	1014.	54.	3.9
09/27 15:05	25.2	83.8	1014.	39.	3.8
09/27 15:10	25.0	84.9	1014.	52.	3.3
09/27 15:15	25.0	85.4	1014.	55.	2.5
09/27 15:20	25.1	84.4	1014.	30.	5.5
09/27 15:25	25.1	84.0	1014.	40.	4.0
09/27 15:30	25.3	83.5	1014.	26.	5.8
09/27 15:35	25.3	83.3	1014.	64.	8.8
09/27 15:40	25.3	83.5	1014.	66.	4.8
09/27 15:45	25.5	82.9	1014.	40.	4.5
09/27 15:50	25.5	82.8	1014.	58.	5.2
09/27 15:55	25.6	82.3	1014.	54.	5.4
09/27 16:00	25.7	81.5	1014.	39.	9.2
09/27 16:05	25.8	81.7	1014.	70.	4.7
09/27 16:10	25.9	81.3	1014.	50.	8.8
09/27 16:15	26.1	80.1	1014.	31.	5.3
09/27 16:20	26.3	79.8	1014.	55.	5.7
09/27 16:25	26.3	79.2	1014.	69.	7.2
09/27 16:30	26.1	80.5	1014.	50.	6.2
09/27 16:35	26.2	80.0	1014.	42.	6.5
09/27 16:40	26.3	80.6	1014.	34.	3.9
09/27 16:45	26.2	80.9	1014.	68.	4.7
09/27 16:50	26.2	80.9	1014.	69.	6.3
09/27 16:55	26.0	81.6	1014.	62.	6.7
09/27 17:00	25.9	82.2	1014.	58.	9.4
09/27 17:05	25.7	83.7	1014.	72.	5.4
09/27 17:10	25.7	83.2	1014.	80.	9.3
09/27 17:15	25.6	84.1	1014.	65.	8.9
09/27 17:20	25.6	84.2	1014.	54.	7.6
09/27 17:25	25.5	84.5	1014.	101.	6.3
09/27 17:30	25.5	84.1	1014.	67.	6.8
09/27 17:35	25.4	84.3	1014.	75.	6.7
09/27 17:40	25.4	84.5	1014.	55.	5.6
09/27 17:45	25.4	84.6	1014.	82.	6.7
09/27 17:50	25.4	84.9	1014.	87.	4.5
09/27 17:55	25.3	85.0	1014.	79.	4.9
09/27 18:00	25.0	87.9	1014.	99.	10.6
09/27 18:05	24.6	86.0	1014.	87.	7.9
09/27 18:10	24.6	84.9	1014.	67.	10.2
09/27 18:15	24.5	85.7	1014.	70.	9.5
09/27 18:20	24.5	85.9	1014.	61.	11.0
09/27 18:25	24.4	85.8	1014.	87.	6.2
09/27 18:30	24.4	85.8	1014.	83.	10.3
09/27 18:35	24.4	86.0	1014.	63.	7.6
09/27 18:40	24.4	85.9	1014.	66.	10.8
09/27 18:45	24.4	85.9	1014.	60.	9.1
09/27 18:50	24.4	86.0	1014.	74.	4.7
09/27 18:55	24.4	86.2	1014.	49.	4.4
09/27 19:00	24.4	85.8	1014.	63.	10.3
09/27 19:05	24.4	86.0	1014.	54.	5.6
09/27 19:10	24.3	86.3	1014.	78.	8.1
09/27 19:15	24.3	86.4	1014.	91.	5.5
09/27 19:20	24.3	85.6	1014.	76.	8.5
09/27 19:25	24.3	85.3	1014.	49.	3.8
09/27 19:30	24.3	85.6	1014.	41.	3.0
09/27 19:35	24.3	86.1	1014.	27.	4.2
09/27 19:40	24.2	86.6	1014.	17.	3.0
09/27 19:45	24.1	87.1	1014.	42.	2.6
09/27 19:50	24.1	87.7	1014.	59.	3.6
09/27 19:55	24.0	88.1	1015.	37.	2.3
09/27 20:00	24.0	88.2	1015.	52.	2.0
09/27 20:05	23.9	88.5	1015.	52.	0.9
09/27 20:10	23.8	89.0	1015.	44.	2.1
09/27 20:15	23.8	89.3	1015.	5.	2.8
09/27 20:20	23.7	89.4	1015.	14.	2.3
09/27 20:25	23.6	89.6	1015.	61.	3.9
09/27 20:30	23.6	89.6	1015.	48.	3.3
09/27 20:35	23.6	89.6	1015.	32.	2.2
09/27 20:40	23.6	89.8	1015.	46.	2.6
09/27 20:45	23.6	90.0	1015.	33.	2.6
09/27 20:50	23.5	90.0	1015.	62.	4.3
09/27 20:55	23.5	90.1	1015.	53.	2.4
09/27 21:00	23.5	90.1	1015.	27.	2.9
09/27 21:05	23.5	90.1	1015.	46.	1.8
09/27 21:10	23.6	90.2	1015.	54.	3.5
09/27 21:15	23.6	90.1	1015.	48.	4.4
09/27 21:20	23.6	90.0	1015.	35.	4.2
09/27 21:25	23.7	89.8	1015.	12.	2.4
09/27 21:30	23.7	89.7	1015.	44.	3.3
09/27 21:35	23.8	89.6	1015.	35.	4.1
09/27 21:40	23.8	89.5	1015.	35.	2.6
09/27 21:45	23.8	89.5	1015.	35.	3.4
09/27 21:50	23.9	89.4	1015.	25.	3.7
09/27 21:55	23.9	89.3	1015.	39.	3.3

	TEMP DEG C AVG	RH % AVG	BARO PRESS MB INST	WIND DIR DEG AVG	WIND SPD KTS AVG
09/27 22:00	23.9	89.4	1015.	58.	3.5
09/27 22:05	23.9	89.3	1015.	61.	4.1
09/27 22:10	23.9	89.4	1015.	36.	4.2
09/27 22:15	23.8	89.4	1015.	46.	4.0
09/27 22:20	23.8	89.4	1015.	32.	6.4
09/27 22:25	23.8	89.4	1015.	19.	4.2
09/27 22:30	23.7	89.5	1015.	39.	3.3
09/27 22:35	23.7	89.4	1015.	61.	6.5
09/27 22:40	23.7	89.4	1015.	21.	2.9
09/27 22:45	23.7	89.4	1015.	55.	5.0
09/27 22:50	23.6	89.4	1015.	46.	3.4
09/27 22:55	23.6	89.7	1015.	50.	5.6
09/27 23:00	23.6	89.7	1015.	35.	5.3
09/27 23:05	23.6	89.7	1015.	29.	4.3
09/27 23:10	23.5	89.6	1015.	45.	5.4
09/27 23:15	23.5	89.6	1015.	61.	5.3
09/27 23:20	23.5	89.7	1015.	45.	4.5
09/27 23:25	23.4	89.8	1015.	43.	7.6
09/27 23:30	23.4	90.0	1015.	64.	5.8
09/27 23:35	23.4	89.9	1015.	65.	5.2
09/27 23:40	23.4	90.0	1015.	54.	2.1
09/27 23:45	23.4	90.1	1015.	58.	4.2
09/27 23:50	23.3	90.2	1015.	35.	3.5
09/27 23:55	23.4	90.3	1015.	50.	4.4
09/28 00:00	23.4	90.1	1015.	20.	4.0
09/28 00:05	23.4	90.0	1015.	48.	4.4
09/28 00:10	23.5	89.8	1015.	64.	5.5
09/28 00:15	23.5	89.7	1015.	35.	3.9
09/28 00:20	23.4	89.8	1015.	64.	2.7
09/28 00:25	23.4	89.6	1015.	41.	2.4
09/28 00:30	23.4	89.6	1015.	32.	3.0
09/28 00:35	23.4	89.4	1015.	50.	4.8
09/28 00:40	23.4	89.2	1015.	56.	5.4
09/28 00:45	23.4	89.1	1014.	51.	3.2
09/28 00:50	23.3	89.2	1014.	28.	3.4
09/28 00:55	23.3	89.3	1014.	49.	5.1
09/28 01:00	23.2	89.3	1014.	2.	3.4
09/28 01:05	23.2	89.5	1015.	43.	3.6
09/28 01:10	23.1	89.6	1015.	58.	1.9
09/28 01:15	23.1	89.7	1015.	17.	3.8
09/28 01:20	23.0	89.8	1015.	35.	3.9
09/28 01:25	23.0	89.9	1014.	41.	2.9
09/28 01:30	22.9	89.9	1014.	37.	4.1
09/28 01:35	22.9	90.1	1014.	21.	5.7
09/28 01:40	22.8	90.1	1014.	46.	1.0
09/28 01:45	22.8	90.3	1014.	35.	4.2
09/28 01:50	22.7	90.4	1014.	46.	0.2
09/28 01:55	22.6	90.6	1014.	332.	1.3
09/28 02:00	22.6	90.8	1014.	37.	2.3
09/28 02:05	22.6	91.1	1014.	27.	2.8
09/28 02:10	22.5	91.3	1014.	13.	4.0
09/28 02:15	22.5	91.4	1014.	43.	2.0
09/28 02:20	22.4	91.7	1014.	43.	4.0
09/28 02:25	22.4	91.9	1014.	51.	3.2
09/28 02:30	22.3	92.0	1014.	48.	2.1
09/28 02:35	22.3	92.1	1014.	46.	2.8
09/28 02:40	22.3	92.1	1014.	70.	4.4
09/28 02:45	22.3	92.1	1014.	27.	2.7
09/28 02:50	22.3	92.3	1014.	6.	4.5
09/28 02:55	22.3	92.3	1014.	30.	4.4
09/28 03:00	22.3	92.4	1014.	2.	3.2
09/28 03:05	22.3	92.4	1014.	39.	5.0
09/28 03:10	22.3	92.4	1014.	39.	4.1
09/28 03:15	22.2	92.5	1014.	49.	5.6
09/28 03:20	22.2	92.6	1014.	55.	3.6
09/28 03:25	22.2	92.7	1014.	55.	1.9
09/28 03:30	22.2	92.7	1014.	33.	1.8
09/28 03:35	22.3	92.6	1014.	43.	2.7
09/28 03:40	22.3	92.6	1014.	28.	5.3
09/28 03:45	22.4	92.5	1014.	47.	2.8
09/28 03:50	22.4	92.4	1014.	65.	5.0
09/28 03:55	22.5	92.1	1014.	31.	5.8
09/28 04:00	22.5	92.0	1014.	38.	9.2
09/28 04:05	22.4	92.1	1014.	63.	3.9
09/28 04:10	22.4	92.2	1014.	43.	3.8
09/28 04:15	22.3	92.3	1014.	60.	3.4
09/28 04:20	22.3	92.4	1014.	50.	3.7
09/28 04:25	22.3	92.6	1014.	45.	2.0
09/28 04:30	22.3	92.5	1014.	61.	4.4
09/28 04:35	22.3	92.5	1014.	57.	1.9
09/28 04:40	22.3	92.4	1014.	45.	3.2
09/28 04:45	22.3	92.4	1014.	60.	2.7
09/28 04:50	22.3	92.4	1014.	28.	3.3
09/28 04:55	22.2	92.4	1014.	18.	3.6
09/28 05:00	22.2	92.4	1014.	50.	4.5
09/28 05:05	22.3	92.3	1014.	37.	2.6
09/28 05:10	22.3	92.3	1014.	21.	1.4
09/28 05:15	22.3	92.3	1014.	33.	3.3
09/28 05:20	22.3	92.3	1014.	11.	2.4
09/28 05:25	22.3	92.3	1014.	25.	1.5
09/28 05:30	22.3	92.2	1014.	44.	4.2
09/28 05:35	22.3	92.2	1014.	39.	5.4
09/28 05:40	22.3	92.1	1014.	46.	1.9
09/28 05:45	22.3	92.1	1014.	51.	2.1
09/28 05:50	22.3	92.0	1014.	51.	2.9
09/28 05:55	22.3	92.0	1015.	59.	4.9
09/28 06:00	22.3	92.0	1015.	21.	2.7
09/28 06:05	22.3	92.0	1015.	47.	3.7
09/28 06:10	22.3	92.0	1015.	60.	5.5
09/28 06:15	22.3	92.0	1015.	54.	7.3
09/28 06:20	22.3	92.0	1015.	44.	3.4
09/28 06:25	22.4	92.0	1015.	63.	2.3
09/28 06:30	22.4	92.0	1015.	61.	7.2
09/28 06:35	22.4	92.0	1015.	33.	6.1
09/28 06:40	22.4	91.9	1015.	54.	5.4
09/28 06:45	22.4	91.7	1015.	31.	5.4
09/28 06:50	22.5	91.7	1015.	38.	8.6
09/28 06:55	22.5	91.7	1015.	59.	5.5
09/28 07:00	22.5	91.5	1015.	53.	4.2
09/28 07:05	22.6	91.5	1015.	63.	5.1
09/28 07:10	22.6	91.5	1015.	38.	4.5
09/28 07:15	22.6	91.2	1015.	46.	7.3
09/28 07:20	22.7	91.1	1015.	27.	4.7
09/28 07:25	22.7	91.1	1015.	53.	4.1
09/28 07:30	22.7	90.9	1015.	62.	4.1

09/28 07:35	22.7	90.8	1015.	60.	3.3
09/28 07:40	22.8	90.3	1015.	63.	5.4
09/28 07:45	22.9	89.9	1015.	56.	4.8
09/28 07:50	23.0	89.4	1015.	37.	5.6
09/28 07:55	23.2	88.9	1015.	54.	3.6
09/28 08:00	23.3	88.1	1015.	8.	7.4
09/28 08:05	23.2	88.2	1016.	13.	5.2
09/28 08:10	23.2	88.3	1016.	69.	4.9
09/28 08:15	23.2	88.2	1016.	59.	5.8
09/28 08:20	23.3	88.0	1016.	32.	3.6
09/28 08:25	23.4	87.9	1016.	62.	4.8
09/28 08:30	23.5	87.9	1016.	61.	3.5
09/28 08:35	23.6	86.8	1016.	25.	4.9
09/28 08:40	23.5	87.2	1016.	44.	4.1
09/28 08:45	23.4	87.3	1016.	38.	3.5
09/28 08:50	23.6	87.2	1016.	25.	3.5
09/28 08:55	23.6	86.9	1016.	64.	6.5
09/28 09:00	23.7	86.5	1016.	82.	5.9
09/28 09:05	23.8	86.1	1016.	52.	4.1
09/28 09:10	24.2	85.3	1016.	59.	7.4
09/28 09:15	24.0	85.6	1016.	69.	8.7
09/28 09:20	24.2	84.5	1016.	55.	6.7
09/28 09:25	24.4	84.6	1016.	60.	4.2
09/28 09:30	24.9	83.2	1016.	82.	4.4
09/28 09:35	24.7	83.8	1016.	69.	4.1
09/28 09:40	24.8	83.3	1016.	99.	7.2
09/28 09:45	24.8	82.7	1016.	82.	3.7
09/28 09:50	24.8	82.7	1016.	57.	10.0
09/28 09:55	24.9	82.9	1016.	57.	4.2
09/28 10:00	24.9	82.8	1016.	56.	6.1
09/28 10:05	25.0	82.1	1016.	65.	7.5
09/28 10:10	25.1	82.1	1016.	68.	8.2
09/28 10:15	25.0	82.9	1016.	79.	7.9
09/28 10:20	25.2	81.9	1016.	96.	5.6
09/28 10:25	25.3	80.7	1016.	77.	8.4
09/28 10:30	25.5	79.6	1016.	92.	4.2
09/28 10:35	25.7	79.0	1016.	63.	6.5
09/28 10:40	26.3	77.3	1016.	77.	4.8
09/28 10:45	26.9	75.1	1016.	345.	4.2
09/28 10:50	27.5	72.6	1016.	45.	7.4
09/28 10:55	27.3	71.7	1016.	2.	5.1
09/28 11:00	26.7	73.7	1016.	26.	5.8
09/28 11:05	26.8	73.6	1016.	79.	4.1
09/28 11:10	27.0	72.3	1016.	46.	2.8
09/28 11:15	27.3	71.2	1016.	64.	6.9
09/28 11:20	27.1	71.4	1016.	44.	2.5
09/28 11:25	27.3	70.3	1016.	83.	6.0
09/28 11:30	27.9	67.9	1016.	59.	4.8
09/28 11:35	28.1	68.6	1016.	347.	4.4
09/28 11:40	27.7	68.5	1016.	28.	6.4
09/28 11:45	27.5	68.8	1016.	337.	5.9
09/28 11:50	27.6	67.6	1016.	349.	6.8
09/28 11:55	27.7	68.1	1016.	22.	6.1
09/28 12:00	27.5	68.0	1016.	355.	4.9
09/28 12:05	27.5	68.8	1016.	351.	4.4
09/28 12:10	27.5	68.5	1016.	7.	4.7
09/28 12:15	27.6	67.5	1015.	341.	3.1
09/28 12:20	27.7	67.7	1015.	13.	1.8
09/28 12:25	27.7	69.0	1015.	341.	2.6
09/28 12:30	27.7	68.8	1015.	37.	2.1
09/28 12:35	27.7	68.6	1015.	22.	5.9
09/28 12:40	27.8	68.7	1015.	19.	4.7
09/28 12:45	28.4	66.1	1015.	31.	4.2
09/28 12:50	28.9	64.4	1015.	328.	4.6
09/28 12:55	29.6	61.7	1015.	67.	3.8
09/28 13:00	29.2	63.7	1015.	95.	0.0
09/28 13:05	28.9	63.2	1015.	302.	4.4
09/28 13:10	28.4	65.1	1015.	42.	3.4
09/28 13:15	28.3	65.0	1015.	31.	4.5
09/28 13:20	27.9	71.7	1015.	121.	3.8
09/28 13:25	27.3	70.9	1015.	348.	2.7
09/28 13:30	27.6	68.7	1015.	332.	4.6
09/28 13:35	27.7	69.0	1015.	3.	4.6
09/28 13:40	27.8	68.9	1015.	313.	3.0
09/28 13:45	27.7	69.2	1015.	335.	2.6
09/28 13:50	27.8	68.0	1015.	343.	5.4
09/28 13:55	27.8	68.0	1015.	351.	4.6
09/28 14:00	27.8	67.0	1014.	43.	4.8
09/28 14:05	28.1	66.2	1014.	344.	1.9
09/28 14:10	28.2	65.3	1014.	342.	2.8
09/28 14:15	28.4	65.8	1014.	337.	1.4
09/28 14:20	28.4	64.9	1014.	42.	4.1
09/28 14:25	28.4	65.2	1014.	38.	2.4
09/28 14:30	28.3	66.4	1014.	28.	2.7
09/28 14:35	28.2	67.1	1014.	22.	3.1
09/28 14:40	28.0	68.6	1014.	318.	3.7
09/28 14:45	27.8	70.2	1014.	3.	4.4
09/28 14:50	28.0	68.6	1014.	44.	4.5
09/28 14:55	28.1	69.5	1014.	0.	3.5
09/28 15:00	28.1	67.4	1014.	312.	7.4
09/28 15:05	28.1	67.0	1014.	11.	5.0
09/28 15:10	28.1	66.9	1014.	355.	3.7
09/28 15:15	28.2	66.4	1014.	20.	6.2
09/28 15:20	28.3	66.6	1014.	355.	2.5
09/28 15:25	28.4	66.4	1014.	3.	2.3
09/28 15:30	28.4	66.4	1014.	331.	5.8
09/28 15:35	28.4	65.5	1014.	21.	3.9
09/28 15:40	28.3	65.9	1014.	321.	4.2
09/28 15:45	28.3	65.2	1014.	4.	4.7
09/28 15:50	28.2	65.0	1014.	29.	6.7
09/28 15:55	28.4	64.2	1014.	342.	4.4
09/28 16:00	28.3	64.7	1014.	40.	4.4
09/28 16:05	28.2	63.8	1014.	348.	3.0
09/28 16:10	28.1	64.3	1014.	16.	6.2
09/28 16:15	28.1	64.4	1014.	352.	9.6
09/28 16:20	28.1	64.8	1014.	351.	3.7
09/28 16:25	28.1	64.5	1014.	2.	2.3
09/28 16:30	28.1	65.0	1014.	7.	3.7
09/28 16:35	28.1	64.9	1014.	2.	2.4
09/28 16:40	28.0	65.2	1014.	39.	4.0
09/28 16:45	27.9	66.5	1014.	311.	6.1
09/28 16:50	27.8	67.3	1014.	324.	4.9
09/28 16:55	27.7	67.8	1014.	317.	4.0
09/28 17:00	27.6	68.4	1014.	333.	4.2
09/28 17:05	27.7	68.7	1014.	345.	2.9
09/28 17:10	27.6	69.1	1014.	343.	2.6
09/28 17:15	27.5	69.8	1014.	316.	1.2
09/28 17:20	27.5	69.6	1014.	315.	3.9
09/28 17:25	27.4	70.0	1014.	355.	0.1
09/28 17:30	27.4	70.6	1014.	317.	2.5

09/28 17:35	27.2	71.3	1014.	347.	1.5
09/28 17:40	27.2	71.7	1014.	339.	2.7
09/28 17:45	27.1	72.6	1014.	355.	3.1
09/28 17:50	26.9	73.3	1014.	321.	2.7
09/28 17:55	26.8	74.0	1014.	349.	1.6
09/28 18:00	26.7	74.7	1014.	341.	1.5
09/28 18:05	26.6	74.5	1014.	8.	2.7
09/28 18:10	26.6	74.7	1014.	3.	1.1
09/28 18:15	26.5	74.9	1014.	321.	0.4
09/28 18:20	26.4	74.9	1014.	304.	1.5
09/28 18:25	26.3	75.2	1014.	320.	0.7
09/28 18:30	26.2	75.8	1014.	5.	0.0
09/28 18:35	26.1	76.3	1014.	342.	1.5
09/28 18:40	26.0	76.8	1014.	343.	0.2
09/28 18:45	25.9	77.2	1014.	349.	0.0
09/28 18:50	25.8	77.6	1014.	4.	0.6
09/28 18:55	25.7	77.9	1015.	323.	3.5
09/28 19:00	25.7	78.0	1015.	341.	1.9
09/28 19:05	25.7	77.8	1015.	7.	1.0
09/28 19:10	25.6	77.8	1015.	9.	0.0
09/28 19:15	25.5	78.2	1015.	322.	2.0
09/28 19:20	25.4	78.2	1015.	351.	3.3
09/28 19:25	25.4	78.5	1015.	349.	1.3
09/28 19:30	25.3	78.7	1015.	349.	1.3
09/28 19:35	25.2	79.0	1015.	338.	2.4
09/28 19:40	25.1	79.4	1015.	331.	1.1
09/28 19:45	25.1	79.7	1015.	352.	2.9
09/28 19:50	25.0	79.4	1015.	324.	2.0
09/28 19:55	25.0	79.3	1015.	333.	4.5
09/28 20:00	25.0	79.2	1015.	320.	4.6
09/28 20:05	25.0	78.9	1015.	336.	3.3
09/28 20:10	25.0	78.5	1015.	27.	3.3
09/28 20:15	25.0	78.5	1015.	347.	3.8
09/28 20:20	24.9	78.5	1015.	308.	3.6
09/28 20:25	24.9	78.6	1015.	335.	1.7
09/28 20:30	24.8	78.8	1016.	355.	2.5
09/28 20:35	24.8	79.0	1016.	320.	0.6
09/28 20:40	24.7	79.0	1016.	330.	2.6
09/28 20:45	24.7	79.0	1016.	17.	0.3
09/28 20:50	24.7	79.2	1016.	325.	3.9
09/28 20:55	24.6	79.3	1016.	338.	2.3
09/28 21:00	24.6	79.3	1016.	299.	3.7
09/28 21:05	24.6	79.3	1016.	350.	3.5
09/28 21:10	24.6	79.2	1016.	22.	3.1
09/28 21:15	24.6	79.3	1016.	4.	3.6
09/28 21:20	24.6	79.3	1016.	348.	4.5
09/28 21:25	24.5	79.3	1016.	355.	1.4
09/28 21:30	24.5	79.3	1016.	333.	0.5
09/28 21:35	24.5	79.5	1016.	335.	3.7
09/28 21:40	24.4	79.8	1016.	274.	1.0
09/28 21:45	24.4	79.9	1016.	8.	3.2
09/28 21:50	24.3	80.1	1016.	337.	1.7
09/28 21:55	24.3	80.3	1016.	340.	1.7
09/28 22:00	24.2	80.5	1016.	307.	4.8
09/28 22:05	24.1	80.6	1016.	341.	3.9
09/28 22:10	24.1	80.8	1016.	320.	3.2
09/28 22:15	24.0	80.9	1016.	311.	3.6
09/28 22:20	24.0	81.1	1016.	319.	4.6
09/28 22:25	23.9	81.1	1016.	315.	1.7
09/28 22:30	23.9	81.3	1016.	8.	2.2
09/28 22:35	23.8	81.4	1016.	8.	4.5
09/28 22:40	23.8	81.5	1016.	6.	1.8
09/28 22:45	23.8	81.4	1016.	10.	3.1
09/28 22:50	23.8	81.3	1016.	3.	1.5
09/28 22:55	23.8	81.2	1016.	343.	3.5
09/28 23:00	23.7	81.4	1016.	324.	3.2
09/28 23:05	23.8	81.2	1016.	6.	6.4
09/28 23:10	23.8	80.9	1016.	338.	1.6
09/28 23:15	23.9	80.4	1016.	313.	3.1
09/28 23:20	23.9	80.0	1016.	0.	4.9
09/28 23:25	24.0	79.2	1016.	342.	3.0
09/28 23:30	24.0	79.0	1016.	291.	2.7
09/28 23:35	24.0	79.0	1016.	343.	5.8
09/28 23:40	24.0	79.1	1016.	337.	4.7
09/28 23:45	23.9	79.1	1016.	14.	4.0
09/28 23:50	23.8	79.1	1016.	3.	6.7
09/28 23:55	23.8	79.0	1016.	355.	5.0

APPENDIX B

RADIOSONDE DATA—ADAK AND TALLAHASSEE

SHIP/STA. NO CD ADAK AK/70454
DATE/TIME (UTC): 00Z/21FEB92
ASCENSION NO. 039
RELEASE TIME: 23:32 Z
LAT: 51° 53' N
LONG: 176° 39' W

0000
2337

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	MRI		
0	0	5	1009.5	3.9	64	-2.3	308	308	T	U
0	58	365	965.4	0.0	69	-5.0	295	352	T	
2	15	769	917.6	-3.9	91	-5.2	286	406	T	
2	25	821	911.6	-4.2	93	-5.2	284	413		U
3	30	1203	868.4	-6.0	96	-6.5	272	461	T	
4	5	1433	843.3	-2.9	98	-3.2	267	492		U
4	10	1466	839.8	-2.6	97	-3.0	266	496	T	
4	45	1693	816.1	-2.3	87	-4.2	256	522	T	U
5	0	1782	807.0	-3.8	44	-14.3	243	523		U
5	5	1811	804.1	-4.0	44	-14.5	242	526	T	
5	20	1902	794.9	-3.3	67	-8.6	245	543	T	U
6	20	2252	760.4	-5.7	70	-10.3	235	599		U
6	25	2283	757.4	-5.8	68	-10.8	234	592	T	
7	10	2564	730.5	-7.7	14	-30.7	216	619		U
10	35	3928	611.3	-16.0	2	-55.1	185	801		U
12	20	4418	572.5	-19.2	31	-32.2	177	871		U
12	50	4543	563.0	-19.7	14	-40.6	173	887		U
13	10	4626	556.7	-20.1	27	-34.4	173	899	T	
16	5	5430	498.8	-26.4	65	-31.0	160	1012		U
16	55	5702	480.3	-28.3	66	-32.7	155	1050		U
18	25	6220	446.6	-31.8	24	-45.8	144	1121		U
22	15	7579	366.7	-43.4	46	-50.5	124	1314	T	
22	30	7672	361.6	-43.9	47	-50.8	123	1327		U
24	50	8493	319.5	-50.3	45	-57.1	111	1445	T	
28	50	9859	258.2	-57.8	28	-67.7	93	1641	T	U

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1009.5	60	15.0	F	D
0	5	39	1005.3	78	19.2		D
5	45	2043	780.9	109	23.5		D
14	30	4970	531.3	107	37.9	F	
19	15	6508	428.6	113	31.3	F	
28	50	9859	258.2	117	53.5	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	MRI
1000.0	82	2.9	61	-3.9	78	19.6	305	316
850.0	1371	-3.9	98	-4.2	100	23.7	268	483
700.0	2895	-9.7	10	-35.7	107	28.4	205	662
500.0	5412	-26.3	62	-31.4	110	37.3	160	1010
400.0	6988	-38.4	33	-48.8	113	34.6	133	1230
300.0	8901	-52.5	40	-60.1	115	52.3	106	1503
250.0	10062	//////	///	///////	////	//////	////	////

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	MRI		
0	0	5	1011.0	2.2	68	-3.1	309	309	T	U
0	53	274	977.7	0.0	74	-4.0	300	343	T	
3	10	1096	881.2	-6.9	93	-7.8	274	447		U
3	50	1358	852.0	-8.8	90	-10.1	265	478	T	U
4	10	1516	834.9	-8.0	27	-23.8	249	487		U
5	0	1860	798.8	-5.6	14	-28.9	235	527	T	
6	35	2449	740.9	-6.0	7	-36.4	217	601	T	
7	5	2653	721.8	-7.0	2	-48.9	211	627		U
8	10	3062	684.7	-8.7	3	-46.5	201	682	T	
12	5	4764	546.6	-21.7	2	-59.1	169	917		U
12	40	4986	530.3	-23.7	42	-33.1	167	950		U
12	45	5014	528.2	-24.0	44	-32.9	167	954	T	
13	25	5234	512.5	-25.4	11	-47.5	161	983		U
14	50	5643	484.3	-28.5	38	-38.5	155	1041		U
16	15	6018	459.4	-31.1	5	-58.7	147	1092		U
20	15	7243	385.2	-40.1	30	-51.2	129	1266	T	U

SHIP/STA.	NO CD ADAK AK/70454
DATE/TIME (UTC):	12Z/21FEB92
ASCENSION NO.	040
RELEASE TIME:	1209 Z
LAT:	51° 53' N
LONG:	176° 39' W

1200
1209

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1011.0	50	15.0	F	D
0	5	31	1007.8	75	23.7		D
2	25	832	911.4	96	23.3		D
4	45	1765	808.6	91	[illegible]2.1	F	
11	50	4657	554.5	95	[illegible]3.0		[illegible]
20	15	7243	385.2	124	[illegible]	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	MRI
1000.0	94	1.7	68	-3.6	78	23.7	305	320
850.0	1376	-8.8	83	-11.2	92	28.8	263	479
700.0	2891	-6.4	3	-46.3	97	23.9	206	660
500.0	5413	-26.6	30	-39.1	104	28.0	159	1008
400.0	6985	-37.9	26	-50.5	124	29.2	132	1229

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	MRI			
0	0	5	1009.5	1.1	58	-6.2	304	305	T	U	
0	30	121	995.1	0.0	60	-6.8	301	320	T		
3	20	976	892.9	-8.1	95	-8.8	278	431		U	
4	40	1323	853.6	-10.4	95	-11.0	266	474	T	U	
5	0	1408	844.3	-5.2	34	-21.3	253	474		U	
5	25	1526	831.6	-5.2	24	-22.7	246	486	T		
6	25	1829	800.2	-4.6	3	-43.6	232	519	T		
6	30	1854	797.6	-4.8	2	-47.4	231	522		U	
8	25	2452	738.8	-8.6	2	-50.0	217	602	T		
10	30	3065	682.4	-10.2	5	-42.9	202	683	T		
17	15	5049	523.9	-22.6	24	-37.8	164	956	T		
24	0	7027	396.6	-38.7	39	-47.6	132	1235		U	
25	10	7361	377.6	-41.6	39	-50.3	127	1283	T		
27	20	7959	345.5	-45.7	17	-60.8	118	1368		U	
31	45	9141	288.2	-55.0	18	-68.5	103	1538	T		
35	0	10162	245.1	-60.7	19	-73.1	90	1685	T		TR
37	20	10870	219.0	-53.4	12	-70.0	77	1784	T		
41	35	12206	178.3	-47.8	1	-82.3	61	1978	T		
52	55	15987	100.3	-48.6	1	-82.8	35	2545	T	U	
60	15	18743	65.8	-53.2	1	-86.0	23	2966	T		TR
62	20	19556	58.1	-48.2	1	-82.5	20	3090	T		
66	45	21393	43.9	-51.4	1	-84.8	15	3374	T		
69	45	22697	35.9	-48.1	1	-82.5	12	3576	T		
80	50	27946	16.2	-47.6	1	-82.1	6	6393	T	U	

SHIP/STA. NO CD ADAK AK/704?
DATE/TIME (UTC) 22 FEB 92/002
ASCENSION NO. 041
RELEASE TIME 2330
LAT: 51° 53' N
LONG: 176° 39' W

0000
2330

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1009.5	60	12.1	F	D
0	5	25	1007.1	75	15.7		D
0	55	253	978.7	87	17.3		D
8	0	2323	751.1	98	18.5		D
18	35	5393	499.8	77	14.4		D
25	5	7338	378.9	101	18.5		D
29	45	8585	314.1	98	23.9	F	
30	10	8690	309.1	98	23.7		D
35	40	10366	237.2	147	13.8		D
37	55	11058	212.7	200	4.5	F	
39	55	11680	193.2	248	6.0		D
42	15	12416	172.7	264	9.5		D
50	25	15132	114.2	269	5.8		D
52	55	15987	100.3	240	8.7	F	D
56	40	17358	81.4	282	9.7		D
58	35	18117	72.5	13	3.9		D
60	30	18829	64.9	55	5.1		D
62	30	19625	57.5	154	6.6		D
65	15	20768	48.4	200	7.2		D
66	20	21211	45.1	185	6.0		D
66	55	21461	43.4	160	6.4	F	
68	25	22097	39.4	96	10.9		D
74	20	24857	25.9	116	19.4		D
77	20	26240	21.0	101	25.5		D
80	50	27946	16.2	110	35.0	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	MRI
1000.0	82	0.4	59	-6.7	78	16.1	302	315
850.0	1356	-9.5	71	-13.8	96	19.2	261	474
700.0	2869	-9.3	2	-60.5	94	17.9	206	657
500.0	5389	-25.2	25	-39.6	77	14.4	158	1004
400.0	6968	-30.1	38	-47.3	96	16.5	133	1227
300.0	8883	-53.1	17	-67.2	102	22.7	106	1500
250.0	10037	-60.2	18	-73.0	133	19.2	91	1667
200.0	11455	-51.5	4	-76.1	236	5.1	70	1968
150.0	13344	-49.4	1	-83.4	260	10.3	52	2147
100.0	16008	-48.5	1	-82.7	241	8.9	35	2548
70.0	18344	-51.9	1	-85.1	27	4.3	25	2905
50.0	20539	-49.1	1	-83.2	195	7.4	17	3242
30.0	23886	-48.2	1	-82.5	107	18.7	10	3760
20.0	26552	-48.5	1	-82.7	101	24.0	7	4174

MAY- 8-92 FRI 10:27 NAVOCEANCOMDET ASHEVILLE FAX NO. 17042530672

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	NRI		
0	0	5	1008.1	0.6	55	-7.4	302	304	T U	
0	18	88	997.7	0.0	55	-7.9	300	314	T	
3	10	1018	886.6	-9.0	94	-9.8	276	436	U	
4	15	1283	856.6	-11.1	95	-11.7	267	468	U	
4	20	1308	853.9	-11.2	83	-13.5	265	470	T	
4	40	1420	841.4	-10.1	39	-21.5	254	477	U	
5	5	1564	826.0	-8.3	10	-34.6	244	489	U	
5	15	1617	820.3	-7.4	8	-36.2	241	495	T	
7	6	2203	760.7	-8.2	3	-46.1	223	569	T	
8	50	2768	707.0	-11.0	5	-43.5	210	645	T	
10	50	3422	648.9	-13.5	12	-37.0	195	733	T	
17	0	5447	493.7	-26.2	8	-50.9	155	1011	T	
26	0	8588	312.3	-51.6	18	-65.5	109	1458	T	
28	40	8571	267.8	-57.0	20	-69.4	96	1599	U	
30	10	10144	244.5	-60.3	18	-73.1	89	1682	T	TR
33	50	11517	197.1	-50.2	4	-75.1	68	1877	T	
44	40	15818	102.5	-48.6	1	-82.8	35	2518	T U	

Time min	s	Hght gpm	Press hPa	dd deg	ff kts	
0	0	5	1008.1	50	14.0	F D
0	5	29	1005.1	71	20.2	D
1	45	560	940.1	88	22.5	D
15	0	4802	539.4	88	19.2	D
28	30	9515	270.2	115	25.7	F
28	30	9886	254.8	122	23.3	D
30	55	10460	232.4	152	13.8	D
32	20	10979	214.2	218	7.4	D
32	30	11049	211.9	224	7.0	F
33	40	11456	198.9	244	6.8	D
43	40	15415	109.0	244	10.5	F D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	NRI
1000.0	70	0.2	54	-8.0	73	20.6	300	311
850.0	1342	-10.7	67	-15.6	93	20.8	261	472
700.0	2944	-11.5	5	-43.8	92	23.5	208	655
500.0	5355	-25.6	9	-49.4	95	18.1	157	998
400.0	6932	-38.0	11	-57.8	103	19.6	132	1220
300.0	8847	-53.2	19	-66.5	108	23.1	106	1495
250.0	10003	-59.9	18	-72.7	125	22.4	91	1661
200.0	11421	-51.1	5	-74.3	243	6.8	70	1863
150.0	13311	-47.8	1	-82.3	248	10.9	52	2141
100.0	15980	/////	///	//////	////	//////	////	////

UUAA 72121 99519 71765 19916
99008 00658 06014 00070 00258 07521 85342 10749 09521
70844 11582 09024 50636 25774 09518 40633 38170 10570
30885 53363 11023 25000 53363 12522 20142 51173 24507
15331 47585 25011
88245 60363 13019
77599=

SHIP/STA. NO CD ADAK AK/70454
DATE/TIME (UTC): 12Z/22FEB92
ASCENSION NO. 042
RELEASE TIME: 1140 Z
LAT: 51° 53' N
LONG: 176° 39' W

1200
1146

MAY- 8-92 FRI 10:28 NAVOCEANCOMDET ASHEVILLE FAX NO. 17042590672 P.07

min	s	gpm	hPa	C	%	C	RI	MRI			
0	0	5	1009.2	0.6	51	-8.4	302	303	T	U	
0	8	39	1005.0	0.0	57	-7.5	303	309	T		
2	45	742	919.4	-7.1	84	-9.3	284	400	T		
3	20	902	900.7	-8.5	92	-9.6	280	421		U	
4	55	1323	852.8	-11.6	94	-12.4	266	473		U	
5	5	1372	847.4	-11.7	92	-12.7	264	479	T		
5	10	1394	844.9	-11.6	84	-13.8	262	481		U	
5	30	1488	834.7	-10.6	29	-25.2	251	485		U	
6	35	1811	800.6	-7.4	21	-26.0	238	522	T		
7	45	2167	764.6	-8.5	8	-37.0	226	566		U	
10	15	2943	691.5	-11.6	15	-33.2	207	669	T		
12	0	3531	640.0	-16.2	21	-33.6	195	750	T		
14	35	4450	565.7	-20.9	11	-43.8	175	873	T		
25	50	7871	347.6	-46.3	12	-64.0	119	1355	T		
31	35	9464	271.8	-57.7	16	-71.6	98	1584	T		
33	15	9925	252.6	-60.0	17	-73.2	92	1650	T		TR
35	10	10422	233.3	-58.9	13	-74.1	85	1721	T		
38	0	11151	208.1	-51.7	3	-78.1	73	1824	T		
44	55	12988	157.2	-46.7	1	-81.5	54	2093	T		
55	35	15958	100.2	-48.4	1	-82.7	35	2540	T	U	
67	5	19635	57.1	-49.9	1	-83.7	20	3103	T	U	

SHIP/STA. NO CD ADAK AK/70454
DATE/TIME (UTC): 23FEB92/00Z
ASCENSION NO. 043
RELEASE TIME: 23:29 Z
LAT: 51° 53' N
LONG: 176° 39' W

0000
2329

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1009.2	70	14.0	F	D
1	40	415	958.6	81	17.1		D
6	0	1635	818.9	74	19.6		D
11	50	3475	644.7	82	13.0		D
19	0	5859	465.7	137	12.8		D
23	55	7340	376.2	136	13.0		D
29	15	8806	301.3	166	13.6		D
32	55	9838	256.1	167	12.6		D
37	45	11090	210.1	233	8.7		D
42	0	12211	176.9	254	11.3		D
45	5	13030	156.2	237	7.2		D
49	25	14208	130.7	234	9.3		D
52	50	15169	113.0	256	9.3		D
55	35	15958	100.2	248	8.2	F	D
57	10	16444	93.1	251	8.9		D
59	25	17143	83.7	198	5.2		D
67	5	19635	57.1	170	8.4	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	MRI
1000.0	79	-0.5	60	-7.3	74	14.4	302	315
850.0	1349	-11.7	93	-12.6	74	19.0	265	477
700.0	2849	-11.1	15	-32.7	80	14.4	209	657
500.0	5351	-27.1	10	-49.7	125	14.8	158	998
400.0	6923	-38.5	6	-63.0	135	13.0	132	1219
300.0	8835	-52.8	14	-68.4	166	13.6	106	1493
250.0	9989	-59.9	17	-73.1	173	12.4	91	1659
200.0	11410	-51.3	1	-84.7	238	10.1	70	1861
150.0	13298	-47.7	1	-82.2	238	8.0	52	2139
100.0	15975	-48.5	1	-82.7	248	8.2	35	2543
70.0	18312	-49.8	1	-83.7	190	3.3	24	2899
50.0	20510	/////	///	//////	////	//////	////	////

UUAA 72231 99519 71765 19816
99009 00659 07014 00079 00557 07514 85349 11709 07519

MAY-8-92 FRI 10:29 NAVOCEANCOMDET ASHEVILLE FAX NO. 17042590672 P.08

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	MRI		
0	0	5	1010.0	-0.6	53	-9.0	303	304	T	U
3	20	1151	872.6	-11.2	92	-12.2	271	452		U
4	45	1623	820.1	-14.8	92	-15.8	256	511	T	U
5	10	1759	805.7	-13.4	27	-28.5	244	520		U
5	55	1996	781.1	-10.8	15	-32.5	233	547	T	
6	45	2272	753.5	-9.8	22	-27.6	225	582	T	
9	40	3272	661.1	-14.7	21	-32.3	201	714	T	
13	20	4475	562.7	-21.2	17	-39.9	174	877	T	
19	25	6390	430.7	-35.1	9	-57.1	141	1144		U
25	0	8119	333.6	-49.1	14	-65.2	116	1390	T	
27	0	8790	300.8	-53.1	31	-62.7	106	1486		U
29	25	9645	262.9	-60.1	30	-69.3	96	1610	T	
30	45	10116	243.7	-61.2	32	-69.8	89	1677	T	TR
31	50	10492	229.5	-57.9	31	-67.0	83	1730		U
33	45	11138	207.4	-51.7	16	-66.5	73	1821	T	
35	35	11749	188.9	-49.8	4	-74.8	66	1910		U
43	5	14356	127.0	-46.5	1	-81.4	43	2297	T	
47	20	15913	100.3	-49.2	1	-83.2	35	2533	T	U
54	25	18563	66.9	-50.4	1	-84.1	23	2938	T	U

SHIP/STA. NO CD ADAK AK/70454
ASCENSION NO. 374
RELEASE TIME: H33 Z
LAT: 51° 53' N
LONG: 176° 38' W
LONG:

SHIP/STA. NO CD ADAK AK/70454
DATE/TIME (UTC): 23 FEB 92 / 12Z
ASCENSION NO. 044
RELEASE TIME: 1133 Z
LAT: 51° 53' N
LONG: 176° 38' W

1200
1133

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1010.0	60	15.0	F	D
1	45	600	936.9	69	21.2		D
7	50	2638	718.5	49	14.6		D
11	5	3748	620.6	55	10.9		D
17	20	5784	469.5	23	4.7		D
18	15	6059	451.6	58	2.5		D
19	50	6516	423.0	167	1.9		D
20	45	6782	407.0	206	1.6	F	
21	10	6906	399.7	228	1.7		D
25	25	8251	326.9	300	7.6		D
26	55	8759	302.3	314	12.1		D
28	10	9198	282.3	309	14.0	F	
35	25	11693	190.5	248	10.1		D
39	15	13004	156.0	253	7.0		D
43	15	14421	125.8	207	13.4		D
45	45	15336	109.5	221	9.1		D
47	20	15913	100.3	207	6.2	F	D
50	35	17124	83.4	195	7.0		D
52	50	17961	73.4	168	6.4		D
54	25	18563	66.9	177	15.2	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	MRI
1000.0	85	-1.0	56	-8.7	66	20.2	301	314
850.0	1351	-12.8	92	-13.8	62	18.3	265	477
700.0	2838	-12.7	20	-31.1	49	14.0	211	657
500.0	5335	-27.6	13	-47.8	25	8.2	159	996
400.0	6901	-39.5	9	-60.7	228	1.7	133	1216
300.0	8808	-53.2	31	-62.8	314	12.4	106	1489
250.0	9958	-60.6	31	-69.5	285	13.0	91	1655
200.0	11375	-50.7	11	-68.4	255	10.9	70	1856
150.0	13260	-48.5	1	-82.7	248	7.2	52	2134
100.0	15933	-49.1	1	-83.2	207	6.2	35	2536
70.0	18268	-49.5	1	-83.4	172	10.5	24	2892

UDAA 73121 99519 71746 10014

SHIP/STA. NO CD ADAK AK/70454
DATE/TIME (UTC): 24FEB92/002
ASCENSION NO. 045
RELEASE TIME: 23:37 Z
LAT: 51° 53' N
LONG: 176° 38' W

0000
2337

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	MRI			
0	0	5	1010.0	-0.6	49	-10.0	302	303	T	U	
3	30	940	896.6	-10.0	81	-12.6	277	424	T		
4	25	1208	865.8	-12.3	90	-13.6	269	459		U	
6	5	1669	814.7	-15.3	66	-17.1	254	516	T	U	
6	25	1756	805.5	-14.6	39	-25.5	246	522		U	
7	35	2076	772.3	-11.9	25	-28.0	233	559	T		
8	0	2192	760.7	-11.7	18	-31.3	228	572		U	
8	40	2373	742.9	-11.6	23	-28.7	224	596	T		
9	50	2682	713.4	-13.8	31	-27.3	217	638	T		
10	15	2791	703.2	-14.0	32	-27.2	214	652		U	
12	20	3274	659.8	-15.1	21	-32.6	201	715	T		
20	40	5492	487.9	-29.7	11	-51.0	156	1018		U	
26	55	7227	379.9	-43.1	14	-60.1	128	1263	T		
32	0	8683	304.6	-53.3	32	-62.6	108	1471		U	
35	50	9825	254.2	-61.5	27	-71.3	93	1636	T		TR
38	40	10690	221.6	-53.3	14	-68.8	78	1757	T		
41	0	11421	197.9	-51.0	2	-80.2	69	1862		U	
42	15	11812	186.5	-47.6	1	-62.1	64	1919	T		
54	30	15913	100.2	-47.6	1	-82.1	34	2533	T	U	
68	5	21302	44.1	-51.7	1	-85.0	15	3360	T		
81	25	27297	17.6	-47.8	1	-82.3	6	4292	T	U	

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1010.0	30	12.1	F	D
0	55	213	984.0	46	21.4		D
4	55	1357	849.1	55	18.9		D
14	25	3755	618.9	36	14.8		D
32	40	8879	295.4	299	14.2		D
36	20	9976	248.1	292	11.7		D
38	20	10586	225.2	270	9.9		D
40	25	11231	203.8	272	6.8		D
42	55	12029	180.4	232	6.8		D
47	0	13348	147.7	225	8.6		D
50	20	14484	124.4	200	6.2		D
54	30	15913	100.2	214	5.4	F	D
57	15	16957	85.5	167	4.3		D
59	20	17756	75.6	177	4.3		D
62	0	18805	64.6	148	7.6		D
67	15	20944	46.6	176	7.0		D
69	55	22104	39.0	93	6.4		D
73	15	23463	31.6	115	15.0		D
79	5	26255	20.6	116	16.9	F	
79	50	26532	19.8	115	19.6		D
81	25	27297	17.6	137	38.9	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	MRI
1000.0	84	-1.7	52	-10.3	40	19.4	300	313
850.0	1349	-13.3	90	-14.6	55	18.9	265	476
700.0	2826	-14.1	31	-27.6	39	17.9	213	657
500.0	5317	-28.6	14	-48.0	8	13.6	159	994
400.0	6878	-40.3	21	-54.4	338	8.0	134	1213
300.0	8781	-54.1	22	-63.3	301	14.2	106	1485
250.0	9928	-61.4	27	-71.2	292	12.1	92	1650
200.0	11353	-51.6	3	-78.0	267	6.0	70	1852
150.0	13247	-48.0	1	-82.4	226	8.7	52	2131
100.0	15926	-47.6	1	-82.1	214	5.4	34	2535
70.0	18277	-48.3	1	-82.6	160	5.6	24	2894
50.0	20481	-50.0	1	-83.6	173	7.4	17	3223
30.0	23809	-50.2	1	-83.9	116	15.6	10	3748

SHIP/STA.	NO CO ADAX AK/70454
DATE/TIME (UTC):	24 FEB 92/1127
ASCENSION NO.	04C
RELEASE TIME:	1133 Z
LAT:	51° 53' N
LONG:	176° 39' W

1200
1133

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	MRI		
0	0	5	1009.3	-2.2	66	-7.7	306	307	T	U
4	0	935	896.4	-9.8	91	-11.0	278	425		U
6	40	1677	813.4	-15.5	88	-17.0	254	517		U
7	20	1848	795.1	-16.7	52	-24.3	245	536	T	
7	35	1910	788.5	-16.6	42	-26.6	242	542		U
8	25	2127	766.1	-14.5	23	-31.2	232	566	T	
9	0	2275	751.3	-14.5	16	-34.9	227	584		U
10	20	2650	715.0	-14.5	11	-38.6	216	632	T	
11	55	3076	675.8	-16.5	8	-43.3	205	688	T	
14	45	3873	607.1	-21.5	3	-55.7	187	795		U
15	35	4105	588.3	-23.0	25	-37.7	184	828		U
19	5	5043	516.9	-28.0	13	-48.1	164	956	T	
23	55	6527	418.4	-38.8	5	-64.6	139	1163		U
26	50	7515	361.4	-47.0	15	-62.9	124	1304	T	
29	0	8252	323.0	-51.1	18	-65.1	113	1409	T	U

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1009.3	350	9.9	F	D
0	5	22	1007.1	23	18.3		D
1	0	249	978.7	40	21.6		D
5	5	1230	862.7	46	24.7		D
7	10	1808	799.4	40	26.8	F	
14	10	3710	620.7	20	18.1	F	
18	55	4997	520.2	3	24.7		D
27	40	7792	346.5	344	30.9	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	MRI
1000.0	79	-2.3	68	-7.4	26	19.0	304	317
850.0	1342	-12.7	89	-14.1	45	25.1	264	475
700.0	2810	-14.9	11	-39.0	31	21.0	212	653
500.0	5280	-30.0	15	-48.5	2	26.4	160	989
400.0	6833	-41.5	7	-64.2	356	32.9	134	1207
300.0	8729	/////	///	//////	////	//////	////	////

UUAA 74124 99519 71765 19816
99009 02356 35010 00079 02350 02519 85342 12714 04525
70810 14974 03021 50528 30169 36026 40683 41573 35533
88999
77999=

NNNN
UUBB 7412/ 99519 71765 19816
00009 02356 11896 09912 22813 15515 33795 16758 44789
16760 55766 14567 66751 14570 77715 14574 88676 16577

SHIP/STA. NO 20 A??SK AK/70?54
DATE/TIME (UTC): 002/25FEB92
ASCENSION NO. 047
RELEASE TIME: 2336 Z
LAT: 51° 53' N
LONG: 176° 39' W

0000
2336

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	NRI			
0	0	5	1007.4	-0.6	62	-7.0	305	306	T	U	
4	15	1399	842.3	-13.6	89	-15.0	262	482		U	
6	5	1979	779.9	-17.9	85	-19.8	244	555		U	
6	15	2027	775.0	-18.3	77	-21.3	242	561	T		
6	30	2100	767.4	-17.5	42	-27.4	237	566		U	
6	50	2186	758.7	-16.4	28	-30.7	232	575	T		
8	0	2454	732.1	-16.4	9	-42.1	222	607		U	
9	50	2935	686.6	-18.2	9	-43.5	210	671	T		
14	15	4496	555.1	-26.3	2	-62.4	175	880	T		
21	10	6974	388.4	-46.0	15	-62.1	133	1228	T		
24	40	8200	321.9	-54.3	13	-70.2	114	1402	T		TR
28	10	9391	267.3	-53.6	8	-73.0	95	1569	T		
30	5	10068	240.8	-49.2	4	-74.3	83	1664	T		
32	0	10711	218.4	-47.0	1	-81.7	75	1757	T		
32	50	11027	208.2	-49.3	1	-83.3	72	1803	T		
36	10	12250	173.0	-45.0	1	-80.3	59	1982	T		
44	50	15876	100.3	-47.6	1	-82.1	35	2527	T	U	
58	40	22513	36.5	-50.3	1	-84.0	13	3547	T	U	

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1007.4	360	8.0	F	D
0	85	292	971.6	357	20.2	F	
16	40	5334	493.6	11	63.0		D
24	30	8142	324.8	4	48.6	F	
32	30	10897	212.3	355	10.5	F	
32	45	10995	209.2	358	9.7		D
34	55	11797	185.2	330	6.4		D
37	45	12856	158.0	340	1.4		D
39	55	13738	138.5	309	1.2		D
40	35	14016	132.8	284	1.9		D
43	20	15203	111.1	349	1.6		D
44	0	15507	106.1	318	1.2		D
44	50	15876	100.3	264	1.6	F	D
45	45	16289	94.3	217	2.9		D
47	30	17127	83.0	254	3.3		D
48	55	17941	74.5	326	2.1		D
49	40	18195	70.6	20	2.5		D
50	40	18680	65.6	69	4.7		D
52	30	19561	57.3	135	7.2		D
53	35	20075	53.0	157	7.8		D
55	45	21160	44.9	142	6.0		D
58	40	22513	36.5	179	8.9	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	NRI
1000.0	63	-1.1	56	-8.8	357	17.9	301	311
850.0	1330	-13.0	87	-16.7	1	19.4	264	473
700.0	2791	-17.3	10	-41.8	8	30.3	213	651
500.0	5243	-32.0	8	-55.6	11	42.4	161	984
400.0	6778	-44.2	14	-61.1	6	46.5	136	1200
300.0	8650	-54.7	11	-71.7	2	45.5	107	1465
250.0	9824	-51.0	6	-72.9	355	24.9	87	1630
200.0	11290	-47.5	1	-82.0	348	7.8	69	1841
150.0	13203	-44.6	1	-80.0	0	8.0	51	2124
100.0	15899	-47.6	1	-82.1	264	1.6	34	2531
70.0	18250	-48.3	1	-82.6	23	2.7	26	2889
50.0	20455	-49.6	1	-83.5	153	7.0	17	3229
30.0	23788	/////	///	//////	////	//////	////	////

SHIP/STA.	NO CD ADAK AK/70464
DATE/TIME (UTC):	25FEB92/12Z
ASCENSION NO.	048
RELEASE TIME:	11:35 Z
LAT:	51° 53' N
LONG:	176° 38' W

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	MRI			
0	0	5	1008.6	-1.1	51	-10.0	102	303	T	U	
2	50	751	917.6	-7.3	84	-9.5	283	401		U	
5	25	1477	835.1	-13.7	93	-14.6	261	492	T		
5	45	1566	825.4	-14.3	93	-15.2	258	504		U	
8	0	2002	779.0	-17.0	86	-18.8	244	558		U	
8	15	2039	775.2	-17.6	68	-22.1	241	561	T		
8	30	2070	772.0	-17.6	53	-24.9	239	564		U	
16	5	3148	668.1	-19.4	29	-33.0	207	701		U	
17	10	3281	656.3	-19.4	31	-32.3	203	718	T		
22	10	4095	587.6	-24.5	51	-31.8	186	829		U	
27	5	4768	535.4	-28.1	41	-37.4	171	920	T		
44	15	7286	371.7	-46.2	21	-59.6	127	1271		U	
47	10	7781	344.7	-50.3	21	-63.2	120	1342	T		
52	0	8572	305.0	-55.0	19	-68.1	109	1454	T		TR
56	20	9265	273.6	-55.4	15	-70.1	98	1552	T		
62	10	10197	237.0	-46.9	7	-68.5	81	1682	T		
77	30	12728	161.8	-45.2	3	-73.2	55	2053	T		
80	20	13201	150.7	-47.4	2	-77.6	52	2124	T		
90	5	14834	117.8	-44.9	1	-80.2	40	2369	T		
96	30	15917	100.1	-47.5	1	-82.0	34	2533	T	U	
100	40	16662	89.3	-51.2	1	-84.6	31	2647	T		
103	55	17250	81.7	-48.2	1	-82.5	28	2736	T		
109	50	18366	69.1	-50.5	1	-84.1	24	2904	T	U	

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1008.6	10	9.9	F	D
10	15	2256	753.0	12	35.0	F	
23	20	4266	573.9	19	42.2		D
31	40	5488	483.7	13	44.1	F	
54	0	8884	290.4	4	39.7	F	
54	30	8964	286.8	5	38.5		D
64	20	10579	223.8	327	17.7		D
64	50	10660	221.1	324	16.9	F	
70	40	11576	192.5	290	19.6		D
76	5	12494	167.6	328	16.5		D
78	0	12814	159.8	319	14.0		D
80	15	13188	151.0	274	12.1		D
83	20	13692	140.0	299	15.6		D
86	0	14131	131.0	281	13.6		D
94	10	15527	106.2	304	11.5		D
96	30	15917	100.1	267	9.9	F	D
109	50	18366	69.1	308	8.4	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	MRI
1000.0	73	-0.8	57	-8.3	10	17.1	301	313
850.0	1342	-12.5	91	-13.7	9	17.7	265	475
700.0	2801	-18.9	35	-30.6	9	34.4	216	656
500.0	5255	-31.9	39	-41.3	11	42.8	162	987
400.0	6794	-43.0	24	-55.7	13	41.0	135	1202
300.0	8677	-54.8	19	-67.9	359	39.7	107	1469
250.0	9848	-50.5	10	-68.9	343	29.5	87	1633
200.0	11323	-46.8	5	-70.9	294	16.9	69	1846
150.0	13233	-47.3	2	-77.5	275	12.1	52	2129
100.0	15922	-47.5	1	-82.0	267	9.9	34	2534
70.0	18260	-50.7	1	-84.3	306	8.7	24	2891

MAY- 8-92 FRI 10:36 NAVOCEANCOMDET ASHEVILLE FAX NO. 17042590672

SHIP/STA.	NO CD ADAK AK/70454
DATE/TIME (UTC):	CC7 26 Feb92
ASCENSION NO.	044
RELEASE TIME:	2342
LAT:	51° 53' N
LONG:	176° 39' W

0000
2342

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	NRI		
0	0	5	1012.3	0.6	53	-7.5	304	304	T	4
0	20	32	1008.8	0.0	46	-10.2	301	306	T	
5	10	1442	842.1	-13.5	29	-14.9	262	483		U
5	30	1529	832.4	-14.1	88	-15.7	255	495	T	U
5	50	1628	821.7	-11.9	25	-28.0	247	533		U
6	5	1697	814.4	-10.4	9	-37.4	242	503		U
6	10	1721	811.5	-9.3	11	-34.9	241	512	T	
6	25	1858	799.6	-8.8	16	-28.9	239	526	T	
7	5	1984	784.7	-9.4	24	-26.3	225	546		U
8	55	2548	725.8	-10.6	3	-47.8	2.6	615	T	
9	0	2565	727.7	-10.8	2	-51.5	216	618		U
10	10	2817	699.5	-14.0	3	-50.3	208	666	T	
15	40	4545	537.8	-26.6	8	-51.3	176	828	T	
22	30	5597	415.6	-38.3	7	-51.7	138	1173	T	
30	5	8633	298.9	-54.9	8	-74.1	106	1488	T	
32	5	6408	271.6	-58.1	9	-75.9	98	1575	T	TR
32	45	9617	262.8	-54.9	8	-73.8	93	1603	T	
35	45	10570	226.7	-45.8	1	-83.7	73	1738	T	
40	35	12153	178.1	-45.7	1	-80.6	61	1969	T	
51	56	15378	100.2	-45.8	1	-81.6	34	2513	T	U
54	10	16859	87.7	-45.8	1	-83.7	30	2677	T	
76	30	25258	22.0	-52.1	1	-85.3	8	4467	T	B

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1012.3	30	9.9	F	D
1	5	219	985.4	17	13.0		D
5	0	1390	847.8	15	16.3		D
8	10	2313	751.9	40	22.5	F	
11	30	3315	655.2	63	22.2		D
23	15	6821	403.2	342	23.1		D
38	5	11342	201.4	294	19.6		D
41	5	12327	173.6	267	17.7		D
44	40	13542	144.6	270	19.0		D
47	30	14467	125.8	252	20.8		D
51	50	15578	105.2	264	14.6	F	D
57	10	17956	74.1	252	14.8		D
60	10	19084	67.4	288	6.4		D
61	10	19450	58.0	256	4.5	F	
62	35	20029	52.9	157	7.0		D
66	15	21477	43.2	209	6.2		D
70	5	23341	33.9	163	11.5		D
73	5	24326	27.8	155	12.2		D
76	30	25858	22.0	143	14.8	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	NRI
1000.0	102	-0.7	44	-11.4	20	12.4	238	314
850.0	1378	-13.8	87	-14.7	15	16.3	264	479
700.0	2861	-13.4	2	-53.3	56	22.4	205	653
500.0	5325	-31.5	8	-52.2	15	22.7	161	937
400.0	6876	-40.3	7	-63.3	342	23.3	133	1213
300.0	8778	-54.7	8	-73.5	326	22.0	107	1465
250.0	9538	-54.5	6	-75.7	306	25.7	83	1649
200.0	11389	-48.3	1	-82.6	293	18.9	63	1857
150.0	13298	-46.0	1	-81.8	270	20.4	51	2133
100.0	15363	-46.3	1	-81.6	264	14.6	34	2545
70.0	18031	-49.8	1	-83.7	161	14.4	24	2902
50.0	20524	-50.8	1	-84.4	209	7.8	17	3240
30.0	23840	-56.7	1	-84.3	185	11.3	10	3753
20.0	26486	/////	///	/////	////	/////	////	////

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	MRI		
0	0	5	1012.1	0.0	54	-8.2	304	305	T	U
0	17	76	1003.1	0.0	52	-8.6	301	313	T	
3	10	1070	884.0	-9.7	92	-10.8	275	443		U
4	10	1454	840.8	-12.8	93	-13.7	262	490	T	U
4	30	1576	827.6	-11.3	27	-26.7	249	496		U
5	5	1785	805.5	-8.6	19	-28.2	239	520	T	
5	40	2002	783.2	-8.5	17	-29.3	233	547	T	
6	30	2310	752.6	-10.6	3	-47.9	223	586		U
7	15	2592	725.4	-12.5	18	-32.0	218	625	T	
7	30	2677	717.3	-13.3	25	-29.2	217	638		U
18	35	6495	423.5	-38.2	13	-56.6	140	1160	T	
20	5	6915	398.3	-40.5	8	-62.4	133	1219		U
20	45	7102	387.5	-42.1	10	-62.0	130	1245	T	
21	30	7319	375.3	-40.9	17	-56.7	126	1275	T	
25	10	8372	320.5	-49.2	27	-60.2	111	1426	T	U

SHIP/STA. NO CD ADAK AK/70454
DATE/TIME (UTC): 26 FEB92/12Z
ASCENSION NO. 050
RELEASE TIME: 11:34 Z
LAT: 51° 53' N
LONG: 176° 38' W

Time min	s	Hght gpm	Press hPa	dd deg	ff kts		
0	0	5	1012.1	40	2.9	F	D
0	5	27	1009.3	78	8.4		D
4	55	1720	812.2	68	7.8		D
7	30	2677	717.3	359	9.5		D
15	55	5753	471.2	308	18.5	F	
16	15	5845	465.0	307	19.0		D
25	10	8372	320.5	315	43.2	F	D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	MRI
1000.0	100	-0.3	53	-8.7	79	8.9	300	316
850.0	1372	-11.9	94	-12.7	74	9.7	265	480
700.0	2862	-14.5	23	-31.2	353	10.9	213	662
500.0	5333	-30.3	14	-49.4	316	17.1	160	997
400.0	6887	-40.3	9	-61.3	305	25.1	133	1215
300.0	8803	/////	///	//////	////	//////	////	////

UUAA 76124 99519 71765 19816
99012 00058 04003 00100 00358 08009 85372 11908 07510
70862 14567 35511 50533 30369 31517 40689 40371 30525
88999
77999=

NNNN
UUBB 7612/ 99519 71765 19816
00012 00058 11003 00059 22884 09711 33841 12909 44828
11365 55806 08770 66783 08571 77753 10787 88725 12570
99717 13366 11424 38368 22398 40572 33388 42170 44375

MAY- 8-92 FRI 10:42 NAVOCEANCOMDET ASHEVILLE FAX NO. 17042590672

Time min	s	Hght gpm	Press hPa	Temp C	Hum %	Td C	RI	MRI		
0	0	5	1010.0	1.1	50	-6.2	302	303	T U	
0	27	136	993.6	0.0	51	-8.9	298	319	T	
4	10	1202	867.5	-10.4	92	-11.4	270	459	U	
5	50	1652	817.9	-13.6	89	-15.0	255	514	T U	
6	10	1751	807.4	-12.7	27	-27.9	244	519	U	
6	55	1970	784.7	-10.0	21	-28.3	235	544	T	
7	40	2192	762.4	-9.7	21	-28.0	228	572	T	
9	15	2678	715.5	-13.4	14	-35.1	215	636	T	
10	5	2941	691.1	-15.7	24	-31.7	211	672	T	
11	20	3334	655.9	-16.2	17	-35.7	200	723	T	
15	50	4754	541.0	-26.9	18	-44.2	171	918	T	
19	10	5800	467.3	-31.7	5	-59.2	150	1061	U	
20	15	6151	444.6	-36.0	20	-49.4	145	1110	T	
20	35	6255	438.0	-34.2	26	-47.2	143	1125	U	
21	5	6423	427.7	-33.7	25	-47.1	139	1148	T	
24	0	7314	376.0	-39.2	12	-58.1	125	1273	U	
24	5	7338	374.8	-39.3	13	-57.5	125	1277	T	
29	0	8866	297.8	-53.2	31	-62.8	105	1497	U	
30	55	9511	269.1	-58.6	27	-68.7	97	1591	T	TR
32	50	10150	243.0	-59.4	23	-70.6	88	1682	T	
33	20	10327	236.2	-58.7	21	-70.6	86	1707	T	
34	30	10715	222.4	-48.2	16	-63.5	77	1759	T	
36	50	11525	196.6	-50.0	2	-79.5	69	1878	T	
36	55	11554	195.7	-49.9	1	-83.7	68	1882	U	
38	55	12265	175.7	-46.0	1	-81.0	60	1986	T	
42	50	13734	141.1	-48.9	1	-83.0	49	2202	T	
44	40	14371	127.8	-44.6	1	-80.0	43	2300	T	
49	0	15994	100.1	-46.9	1	-81.6	34	2545	T U	
51	5	16818	88.4	-46.2	1	-81.1	30	2671	T	
53	35	17826	75.8	-50.8	1	-84.4	26	2825	T	TR
59	30	20255	52.3	-49.5	1	-83.4	18	3198	T	
61	15	21001	46.6	-52.5	1	-85.5	16	3314	T	
69	35	24631	26.6	-52.3	1	-85.4	9	3876	T U	

SHIP/STA.	NO CO ADAK AK/70454
DATE/TIME (UTC):	27FEB92/00Z
ASCENSION NO.	051
RELEASE TIME:	2335 Z
LAT:	51° 63' N
LONG:	176° 39' W

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2335

Time min	s	Hght gpm	Press hPa	dd deg	ff kts	
0	0	5	1010.0	90	8.0	F D
5	25	1528	831.4	70	14.6	D
8	35	2470	735.3	32	10.7	D
16	55	5093	516.1	317	15.0	D
20	40	6282	436.3	302	19.0	F
21	25	6525	421.5	300	21.2	D
24	15	7389	371.9	308	32.9	D
28	25	8678	306.5	293	39.8	F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F [illegible]
59	45	20351	51.5	217	5.8	D
60	0	20456	50.7	215	5.6	F
61	35	21149	45.6	190	7.2	D
69	35	24631	26.6	155	15.6	F D

Press hPa	Hght gpm	Temp C	Hum %	Td C	dd deg	ff kts	RI	MRI
1000.0	85	0.5	51	-8.5	82	13.6	300	313
850.0	1359	-11.5	93	-12.4	72	15.6	265	478
700.0	2845	-15.1	21	-32.6	23	9.1	213	659
500.0	5320	-29.4	10	-51.6	313	16.1	160	995
400.0	6890	-36.6	15	-54.1	304	26.2	131	1213
300.0	8818	-52.6	30	-62.5	294	39.3	106	1490
250.0	9972	-59.3	24	-70.2	280	33.6	91	1656
200.0	11413	-49.8	2	-79.3	251	16.7	69	1861
150.0	13312	-47.0	1	-81.7	227	17.9	51	2141
100.0	16002	-46.9	1	-81.6	197	21.8	34	2547
70.0	18348	-49.7	1	-83.6	201	19.2	24	2905
50.0	20545	-50.2	1	-83.9	212	5.6	17	3243
30.0	23857	-51.5	1	-84.8	162	13.0	11	3756

TALLAHASSEE, FLORIDA 9-20-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAP TIME (M /SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1009.00	18	29.2	8.7	59.0	190	2.6
.18	1000.00	98	28.5	8.9	58.1	999	999.9
1.00	9999.99	291	999.9	-9.9	-99.9	999	999.9
2.00	9999.99	566	999.9	-9.9	-99.9	999	999.9
2.48	925.00	786	22.9	5.8	69.4	999	999.9
3.00	9999.99	839	999.9	-9.9	-99.9	295	2.6
4.00	9999.99	1104	999.9	-9.9	-99.9	306	1.5
4.42	872.90	1289	18.5	2.3	86.2	352	1.5
5.00	9999.99	1375	999.9	-9.9	-99.9	14	1.5
5.30	850.00	1517	17.3	2.9	83.2	30	2.1
6.00	9999.99	1649	999.9	-9.9	-99.9	44	2.6
6.12	831.80	1702	16.1	3.1	82.0	44	2.6
6.42	819.10	1834	15.6	6.2	66.4	45	2.6
7.00	9999.99	1915	999.9	-9.9	-99.9	46	2.6
7.18	803.60	1996	14.4	4.6	73.7	999	999.9
7.42	794.00	2097	13.9	6.4	65.2	999	999.9
8.00	9999.99	2175	999.9	-9.9	-99.9	999	999.9
8.42	769.80	2358	12.4	5.6	68.2	999	999.9
9.00	9999.99	2439	999.9	-9.9	-99.9	999	999.9
9.06	760.00	2466	11.6	3.0	81.5	999	999.9
9.18	755.30	2518	11.3	3.1	81.2	999	999.9
9.30	750.60	2570	11.2	5.9	66.7	999	999.9
10.00	9999.99	2703	999.9	-9.9	-99.9	999	999.9
10.06	736.40	2730	10.4	4.1	75.4	999	999.9
10.18	731.70	2783	10.1	6.0	66.0	999	999.9
10.30	726.90	2838	9.7	4.6	73.0	999	999.9
10.54	717.30	2948	9.4	8.1	56.9	999	999.9
11.00	714.90	2976	9.3	6.4	64.0	999	999.9
11.18	707.80	3059	8.6	6.6	63.0	999	999.9
11.30	703.20	3113	8.1	5.0	70.3	999	999.9
11.36	700.00	3151	7.9	2.6	83.5	999	999.9
12.00	9999.99	3259	999.9	-9.9	-99.9	14	5.1
12.42	675.30	3447	6.9	3.7	76.9	13	5.7
13.00	9999.99	3534	999.9	-9.9	-99.9	12	5.7
14.00	9999.99	3824	999.9	-9.9	-99.9	8	5.7
14.12	640.40	3882	4.1	3.5	77.8	8	5.7
15.00	9999.99	4104	999.9	-9.9	-99.9	8	4.6
15.42	608.40	4298	2.3	5.5	66.7	12	3.6
16.00	9999.99	4374	999.9	-9.9	-99.9	14	3.1
16.12	599.00	4424	1.8	14.6	33.3	14	3.1
16.24	595.20	4476	1.6	10.9	44.5	14	2.6
16.36	591.40	4527	1.5	16.6	28.1	14	2.6
16.42	589.50	4553	1.4	18.6	23.8	14	2.6
16.54	585.50	4608	.9	11.1	43.7	14	2.1
17.00	9999.99	4636	999.9	-9.9	-99.9	14	2.1
17.06	581.50	4663	.6	11.3	42.8	15	2.1
17.18	577.20	4722	.1	6.8	60.2	16	2.1
17.30	573.20	4778	-.4	6.8	60.1	17	2.1
17.48	567.60	4857	-.5	30.0	20.0	19	2.1
1 00	563.80	4910	-.7	30.0	20.0	20	2.1
18.18	557.90	4994	-1.1	16.9	26.7	19	2.1
18.42	550.00	5108	-1.7	18.8	22.3	18	2.1
18.54	546.00	5166	-2.1	30.0	20.0	17	2.1
19.00	544.10	5194	-2.3	13.1	36.4	17	2.1

TALLAHASSEE, FLORIDA 9-20-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
19.06	542.10	5223	-2.5	10.8	43.6	18	2.1
19.30	534.70	5332	-3.4	8.5	52.0	20	1.5
19.36	532.80	5360	-3.6	10.9	42.9	20	1.5
19.42	531.10	5385	-3.7	30.0	20.0	21	1.5
19.48	529.40	5411	-3.7	30.0	20.0	21	1.5
20.00	9999.99	5464	999.9	-9.9	-99.9	22	1.5
20.24	518.90	5569	-4.6	15.1	30.0	43	1.5
20.54	509.80	5708	-4.5	30.0	20.0	71	1.5
21.00	9999.99	5739	999.9	-9.9	-99.9	77	1.5
21.24	500.00	5861	-5.5	18.0	22.8	74	2.1
21.54	491.20	6000	-6.2	30.0	20.0	72	3.1
22.00	9999.99	6028	999.9	-9.9	-99.9	71	3.1
22.42	477.40	6222	-6.8	30.0	20.0	51	4.6
23.00	9999.99	6307	999.9	-9.9	-99.9	42	5.1
24.00	9999.99	6589	999.9	-9.9	-99.9	22	7.7
25.00	9999.99	6870	999.9	-9.9	-99.9	12	7.7
25.18	434.20	6955	-12.7	30.0	20.0	10	7.7
26.00	9999.99	7153	999.9	-9.9	-99.9	5	7.2
27.00	9999.99	7435	999.9	-9.9	-99.9	359	6.2
27.30	400.00	7576	-16.7	30.0	20.0	356	5.7
28.00	9999.99	7710	999.9	-9.9	-99.9	353	5.7
29.00	9999.99	7978	999.9	-9.9	-99.9	345	5.1
30.00	9999.99	8246	999.9	-9.9	-99.9	340	4.6
30.48	355.00	8461	-23.4	30.0	20.0	340	3.6
31.00	9999.99	8521	999.9	-9.9	-99.9	340	3.6
31.54	339.30	8791	-25.0	30.0	20.0	331	3.1
32.00	9999.99	8819	999.9	-9.9	-99.9	330	3.1
33.00	9999.99	9094	999.9	-9.9	-99.9	330	3.6
34.00	9999.99	9370	999.9	-9.9	-99.9	331	3.1
35.00	9999.99	9645	999.9	-9.9	-99.9	337	1.5
35.06	300.00	9673	-32.2	30.0	20.0	340	1.5
36.00	9999.99	9908	999.9	-9.9	-99.9	8	2.1
37.00	9999.99	10169	999.9	-9.9	-99.9	13	3.6
38.00	9999.99	10430	999.9	-9.9	-99.9	8	4.6
38.24	265.00	10534	-39.9	30.0	20.0	11	5.1
39.00	9999.99	10692	999.9	-9.9	-99.9	16	5.7
39.54	250.00	10930	-43.0	-9.9	-99.9	25	7.2
40.00	9999.99	10957	999.9	-9.9	-99.9	26	7.2
41.00	9999.99	11222	999.9	-9.9	-99.9	31	7.2
41.48	231.80	11435	-46.5	-9.9	-99.9	43	6.2
42.00	9999.99	11501	999.9	-9.9	-99.9	47	6.2
43.00	9999.99	11833	999.9	-9.9	-99.9	38	6.2
44.00	9999.99	12164	999.9	-9.9	-99.9	17	7.7
44.42	200.00	12396	-55.3	-9.9	-99.9	7	8.7
45.00	9999.99	12487	999.9	-9.9	-99.9	3	9.3
46.00	9999.99	12792	999.9	-9.9	-99.9	344	11.3
46.06	187.00	12822	-58.6	-9.9	-99.9	343	11.3
47.00	9999.99	13053	999.9	-9.9	-99.9	338	11.8
47.24	177.30	13155	-60.2	-9.9	-99.9	337	11.3
48.00	9999.99	13307	999.9	-9.9	-99.9	336	10.3
49.00	9999.99	13559	999.9	-9.9	-99.9	335	8.7
49.24	163.40	13660	-64.2	-9.9	-99.9	335	8.7
50.00	159.40	13811	-64.5	-9.9	-99.9	335	9.3
51.00	9999.99	14075	999.9	-9.9	-99.9	333	7.2

TALLAHASSEE, FLORIDA 9-20-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL[illegible]P TIME ([illegible]/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
51.24	150.00	14180	-66.9	-9.9	-99.9	333	7.2
52.00	9999.99	14354	999.9	-9.9	-99.9	332	6.7
53.00	9999.99	14643	999.9	-9.9	-99.9	331	5.1
54.00	9999.99	14933	999.9	-9.9	-99.9	324	5.7
54.18	130.30	15020	-72.5	-9.9	-99.9	323	6.2
55.00	9999.99	15222	999.9	-9.9	-99.9	320	7.2
55.30	122.80	15366	-74.4	-9.9	-99.9	319	8.2
56.00	9999.99	15509	999.9	-9.9	-99.9	318	9.3
56.30	116.90	15652	-75.1	-9.9	-99.9	317	9.8
57.00	9999.99	15795	999.9	-9.9	-99.9	315	10.3
57.06	113.50	15824	-73.2	-9.9	-99.9	315	10.3
57.48	109.50	16034	-73.9	-9.9	-99.9	314	9.3
58.00	9999.99	16097	999.9	-9.9	-99.9	314	8.7
58.12	107.20	16159	-72.1	-9.9	-99.9	312	8.2
58.36	104.70	16298	-72.2	-9.9	-99.9	306	6.7
59.00	9999.99	16434	999.9	-9.9	-99.9	301	5.7
59.24	100.00	16570	-69.5	-9.9	-99.9	290	4.6
60.00	9999.99	16732	999.9	-9.9	-99.9	277	3.6
60.18	96.00	16813	-69.4	-9.9	-99.9	272	3.6
60.54	93.10	16996	-70.3	-9.9	-99.9	260	3.6
61.00	9999.99	17029	999.9	-9.9	-99.9	258	3.6
61.42	89.10	17257	-70.2	-9.9	-99.9	263	4.1
62.00	9999.99	17351	999.9	-9.9	-99.9	265	4.1
[illegible].12	86.80	17413	-69.2	-9.9	-99.9	265	4.1
62.36	84.90	17545	-69.9	-9.9	-99.9	264	4.6
63.00	9999.99	17664	999.9	-9.9	-99.9	263	4.6
63.06	82.80	17694	-68.9	-9.9	-99.9	261	4.6
63.36	80.90	17834	-67.0	-9.9	-99.9	254	5.7
64.00	9999.99	17942	999.9	-9.9	-99.9	249	6.2
64.42	77.00	18132	-67.6	-9.9	-99.9	250	6.2
65.00	9999.99	18224	999.9	-9.9	-99.9	251	6.2
66.00	9999.99	18529	999.9	-9.9	-99.9	257	6.2
66.36	70.00	18712	-63.1	-9.9	-99.9	276	5.7
67.00	9999.99	18836	999.9	-9.9	-99.9	289	5.7
68.00	9999.99	19145	999.9	-9.9	-99.9	334	6.2
69.00	9999.99	19455	999.9	-9.9	-99.9	348	6.2
69.12	61.50	19517	-58.7	-9.9	-99.9	347	5.7
70.00	9999.99	19763	999.9	-9.9	-99.9	344	3.6
71.00	9999.99	20069	999.9	-9.9	-99.9	308	2.6
72.00	9999.99	20376	999.9	-9.9	-99.9	285	3.1
73.00	9999.99	20683	999.9	-9.9	-99.9	277	3.6
73.24	50.00	20806	-62.3	-9.9	-99.9	288	3.6
74.00	9999.99	21009	999.9	-9.9	-99.9	307	3.6
75.00	9999.99	21347	999.9	-9.9	-99.9	345	3.1
75.48	43.90	21618	-57.8	-9.9	-99.9	10	2.1
76.00	9999.99	21683	999.9	-9.9	-99.9	16	2.1
77.00	9999.99	22010	999.9	-9.9	-99.9	62	2.1
78.00	9999.99	22337	999.9	-9.9	-99.9	84	3.6
[illegible].36	38.00	22533	-55.9	-9.9	-99.9	91	4.1
[illegible].00	9999.99	22662	999.9	-9.9	-99.9	95	4.1
80.00	9999.99	22985	999.9	-9.9	-99.9	93	4.6
80.30	34.50	23146	-57.0	-9.9	-99.9	90	4.6
81.00	9999.99	23317	999.9	-9.9	-99.9	87	5.1
82.00	9999.99	23659	999.9	-9.9	-99.9	79	5.7

TALLAHASSEE, FLORIDA 9-20-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL(M) TIME /SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
83.00	9999.99	24001	999.9	-9.9	-99.9	76	6.2
83.06	30.00	24035	-55.0	-9.9	-99.9	76	6.2
84.00	9999.99	24343	999.9	-9.9	-99.9	78	7.2
84.36	27.70	24549	-51.7	-9.9	-99.9	80	7.7
85.00	9999.99	24693	999.9	-9.9	-99.9	82	7.7
86.00	9999.99	25054	999.9	-9.9	-99.9	88	8.2
87.00	9999.99	25414	999.9	-9.9	-99.9	94	8.7
88.00	9999.99	25775	999.9	-9.9	-99.9	102	9.3
88.36	22.20	25991	-49.8	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-20-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELAP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1010.40	18	20.0	.2	99.0	50	1.5
.12	1004.70	67	22.2	.7	96.0	999	999.9
.24	1000.00	108	23.0	.7	96.1	999	999.9
.36	993.30	167	23.6	1.1	93.7	999	999.9
.48	987.70	217	24.1	4.7	74.5	999	999.9
1.00	9999.99	266	999.9	-9.9	-99.9	999	999.9
1.06	979.40	291	24.2	4.1	77.8	999	999.9
1.12	976.70	315	24.4	5.4	71.3	999	999.9
1.30	968.30	391	24.2	4.5	75.6	999	999.9
2.00	954.60	516	23.9	6.2	67.6	145	3.1
3.00	9999.99	746	999.9	-9.9	-99.9	152	3.6
3.12	925.00	792	21.8	5.3	71.3	152	3.6
4.00	9999.99	993	999.9	-9.9	-99.9	152	3.6
5.00	9999.99	1244	999.9	-9.9	-99.9	132	3.6
6.00	9999.99	1496	999.9	-9.9	-99.9	127	4.1
6.06	850.00	1521	17.0	6.7	64.4	126	4.1
7.00	9999.99	1740	999.9	-9.9	-99.9	119	3.6
7.06	826.10	1764	15.2	6.6	64.4	118	3.6
8.00	9999.99	1983	999.9	-9.9	-99.9	112	3.1
8.18	798.00	2056	12.6	4.0	76.4	108	3.1
8.48	787.00	2173	11.9	3.6	78.3	101	2.6
9.00	9999.99	2222	999.9	-9.9	-99.9	98	2.6
9.24	773.30	2320	12.3	8.6	55.4	89	2.6
10.00	759.40	2472	11.9	8.9	54.5	76	2.6
10.18	752.60	2548	11.3	7.7	58.7	70	2.6
10.24	750.30	2573	11.0	5.2	70.1	68	2.6
10.42	743.40	2651	10.6	8.1	57.3	61	2.1
11.00	9999.99	2726	999.9	-9.9	-99.9	55	2.1
11.36	723.50	2876	9.1	6.4	63.8	19	2.1
12.00	714.60	2979	8.4	2.7	83.4	355	2.1
12.12	710.10	3031	8.2	3.5	78.4	351	2.6
12.18	707.90	3057	8.3	7.3	59.7	348	2.6
12.36	700.00	3150	8.1	4.9	71.2	340	3.6
13.00	691.90	3246	8.5	8.7	54.2	332	4.1
13.12	688.00	3293	8.3	10.6	47.4	335	4.1
13.48	674.30	3459	7.0	8.2	55.9	346	3.6
14.00	9999.99	3509	999.9	-9.9	-99.9	349	3.6
14.12	666.10	3559	6.1	8.9	52.9	356	3.1
14.36	657.50	3666	5.6	8.6	53.9	12	2.6
15.00	9999.99	3765	999.9	-9.9	-99.9	27	2.1
15.18	643.60	3840	4.6	13.5	37.2	41	2.1
15.42	635.80	3940	4.3	15.2	32.6	59	1.5
15.54	631.80	3991	4.2	10.6	46.3	68	1.5
16.00	9999.99	4017	999.9	-9.9	-99.9	73	1.5
16.06	627.80	4043	4.2	13.5	37.0	73	1.5
16.18	623.90	4094	4.1	12.6	39.6	72	1.5
16.30	620.00	4145	4.1	18.2	25.3	72	1.5
16.42	616.10	4196	4.0	18.0	25.7	72	2.1
17.00	9999.99	4274	999.9	-9.9	-99.9	71	2.1
18.00	9999.99	4536	999.9	-9.9	-99.9	50	1.5
18.12	586.90	4568	1.1	16.9	27.3	48	1.5
19.00	9999.99	4787	999.9	-9.9	-99.9	40	1.0
19.12	569.00	4837	.1	30.0	20.0	29	1.0
20.00	9999.99	5043	999.9	-9.9	-99.9	343	.5

TALLAHASSEE, FLORIDA 9-20-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELAP TIME (M /SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
20.24	547.40	5146	-2.0	17.6	24.7	313	.5
21.00	9999.99	5304	999.9	-9.9	-99.9	267	1.0
21.12	533.10	5356	-3.1	30.0	20.0	269	1.0
22.00	9999.99	5569	999.9	-9.9	-99.9	275	1.0
23.00	9999.99	5834	999.9	-9.9	-99.9	337	1.5
23.06	500.00	5861	-5.5	30.0	20.0	337	1.5
24.00	9999.99	6102	999.9	-9.9	-99.9	338	2.1
25.00	9999.99	6369	999.9	-9.9	-99.9	308	1.0
26.00	9999.99	6636	999.9	-9.9	-99.9	236	.5
27.00	9999.99	6904	999.9	-9.9	-99.9	356	.5
28.00	9999.99	7171	999.9	-9.9	-99.9	334	1.5
29.00	9999.99	7438	999.9	-9.9	-99.9	333	1.5
29.30	400.00	7572	-17.5	30.0	20.0	335	2.1
30.00	9999.99	7714	999.9	-9.9	-99.9	338	2.6
30.12	389.50	7771	-18.9	30.0	20.0	338	3.1
30.36	384.00	7876	-19.8	14.5	26.4	337	3.6
30.48	381.20	7931	-20.1	14.2	27.0	337	3.6
31.00	378.10	7991	-20.2	30.0	20.0	337	4.1
31.54	365.40	8243	-22.4	16.7	20.2	332	4.6
32.00	9999.99	8270	999.9	-9.9	-99.9	331	4.6
32.06	362.80	8296	-22.9	11.9	33.0	332	4.6
32.48	353.10	8494	-24.4	10.5	37.3	340	5.1
33.00	9999.99	8554	999.9	-9.9	-99.9	343	5.1
[illegible].30	343.10	8703	-25.8	6.6	53.9	350	5.7
[illegible]4.00	9999.99	8844	999.9	-9.9	-99.9	357	6.2
34.42	327.40	9041	-27.3	11.2	33.7	353	6.7
35.00	9999.99	9122	999.9	-9.9	-99.9	351	6.7
36.00	9999.99	9393	999.9	-9.9	-99.9	345	8.7
37.00	300.00	9664	-32.6	13.1	25.5	345	10.3
38.00	9999.99	9905	999.9	-9.9	-99.9	343	11.3
38.36	283.90	10050	-35.3	30.0	20.0	340	10.8
39.00	9999.99	10148	999.9	-9.9	-99.9	338	10.8
40.00	9999.99	10391	999.9	-9.9	-99.9	338	10.3
40.42	263.60	10562	-39.9	30.0	20.0	342	10.3
41.00	9999.99	10629	999.9	-9.9	-99.9	343	10.3
42.00	9999.99	10854	999.9	-9.9	-99.9	348	9.8
42.18	250.00	10921	-43.4	-9.9	-99.9	350	9.8
43.00	9999.99	11081	999.9	-9.9	-99.9	354	9.8
43.48	237.50	11264	-46.3	-9.9	-99.9	353	10.8
44.00	9999.99	11317	999.9	-9.9	-99.9	353	10.8
44.54	227.30	11554	-49.4	-9.9	-99.9	346	12.9
45.00	9999.99	11578	999.9	-9.9	-99.9	345	12.9
46.00	9999.99	11822	999.9	-9.9	-99.9	343	12.3
47.00	9999.99	12065	999.9	-9.9	-99.9	346	11.8
48.00	9999.99	12309	999.9	-9.9	-99.9	348	12.9
48.18	200.00	12382	-54.9	-9.9	-99.9	348	13.4
49.00	9999.99	12569	999.9	-9.9	-99.9	348	14.4
50.00	9999.99	12836	999.9	-9.9	-99.9	345	14.9
51.00	9999.99	13103	999.9	-9.9	-99.9	344	15.4
[illegible].42	173.10	13290	-62.3	-9.9	-99.9	343	14.9
52.00	9999.99	13366	999.9	-9.9	-99.9	342	14.4
53.00	9999.99	13619	999.9	-9.9	-99.9	341	13.9
54.00	9999.99	13872	999.9	-9.9	-99.9	341	13.4
54.42	152.90	14049	-66.3	-9.9	-99.9	330	10.3

TALLAHASSEE, FLORIDA 9-20-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

E[illegible] TIME ([illegible]N/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
55.00	9999.99	14136	999.9	-9.9	-99.9	324	8.7
55.06	150.00	14165	-65.9	-9.9	-99.9	322	8.7
56.00	9999.99	14403	999.9	-9.9	-99.9	304	7.2
57.00	9999.99	14668	999.9	-9.9	-99.9	292	7.2
58.00	9999.99	14933	999.9	-9.9	-99.9	303	8.7
59.00	9999.99	15197	999.9	-9.9	-99.9	318	9.3
59.36	122.90	15356	-72.5	-9.9	-99.9	323	8.2
60.00	9999.99	15466	999.9	-9.9	-99.9	326	7.7
61.00	115.10	15741	-72.5	-9.9	-99.9	323	6.2
62.00	9999.99	16012	999.9	-9.9	-99.9	303	5.1
62.54	105.40	16256	-74.3	-9.9	-99.9	288	6.7
63.00	9999.99	16284	999.9	-9.9	-99.9	286	6.7
64.00	100.00	16565	-71.1	-9.9	-99.9	287	8.7
65.00	9999.99	16845	999.9	-9.9	-99.9	291	9.8
66.00	9999.99	17124	999.9	-9.9	-99.9	297	8.7
66.06	90.60	17152	-69.0	-9.9	-99.9	298	8.7
66.36	88.60	17286	-67.4	-9.9	-99.9	304	7.7
67.00	9999.99	17392	999.9	-9.9	-99.9	308	6.7
67.18	85.90	17472	-68.1	-9.9	-99.9	315	6.7
68.00	9999.99	17658	999.9	-9.9	-99.9	332	6.2
68.18	82.20	17737	-67.6	-9.9	-99.9	341	6.2
69.00	9999.99	17929	999.9	-9.9	-99.9	4	6.2
70.00	9999.99	18202	999.9	-9.9	-99.9	27	5.7
[illegible]1.00	72.80	18476	-63.2	-9.9	-99.9	47	4.6
72.00	70.00	18717	-63.3	-9.9	-99.9	77	4.1
73.00	66.60	19025	-61.8	-9.9	-99.9	124	2.6
74.00	9999.99	19331	999.9	-9.9	-99.9	153	1.5
74.42	61.20	19546	-63.4	-9.9	-99.9	146	1.5
75.00	9999.99	19628	999.9	-9.9	-99.9	143	1.5
76.00	9999.99	19903	999.9	-9.9	-99.9	172	2.6
77.00	55.30	20178	-57.5	-9.9	-99.9	169	2.1
78.00	9999.99	20468	999.9	-9.9	-99.9	131	2.6
79.00	9999.99	20757	999.9	-9.9	-99.9	125	2.6
79.12	50.00	20815	-56.8	-9.9	-99.9	120	2.6
80.00	9999.99	21058	999.9	-9.9	-99.9	97	2.6
81.00	9999.99	21362	999.9	-9.9	-99.9	87	2.6
82.00	9999.99	21666	999.9	-9.9	-99.9	67	2.6
83.00	41.70	21970	-55.0	-9.9	-99.9	52	3.1
84.00	9999.99	22292	999.9	-9.9	-99.9	54	3.6
85.00	9999.99	22615	999.9	-9.9	-99.9	54	5.1
85.06	37.50	22647	-56.2	-9.9	-99.9	55	5.1
86.00	9999.99	22950	999.9	-9.9	-99.9	64	5.1
87.00	9999.99	23286	999.9	-9.9	-99.9	76	4.6
87.18	33.40	23387	-53.5	-9.9	-99.9	76	4.6
88.00	9999.99	23618	999.9	-9.9	-99.9	77	4.1
89.00	9999.99	23947	999.9	-9.9	-99.9	92	4.1
89.24	30.00	24079	-52.8	-9.9	-99.9	88	4.6
90.00	9999.99	24285	999.9	-9.9	-99.9	81	5.1
[illegible].00	9999.99	24629	999.9	-9.9	-99.9	76	6.7
[illegible].36	26.70	24835	-50.5	-9.9	-99.9	77	7.7
92.00	9999.99	24982	999.9	-9.9	-99.9	77	8.2
92.42	25.10	25238	-51.2	-9.9	-99.9	79	9.3
93.00	9999.99	25351	999.9	-9.9	-99.9	80	9.8
94.00	9999.99	25728	999.9	-9.9	-99.9	88	10.8

TALLAHASSEE, FLORIDA 9-20-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELAP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
94.54	22.10	26068	-49.7	-9.9	-99.9	90	11.3
95.00	9999.99	26103	999.9	-9.9	-99.9	90	11.3
96.00	9999.99	26450	999.9	-9.9	-99.9	93	11.3
96.48	20.00	26728	-45.6	-9.9	-99.9	91	10.8
97.00	9999.99	26803	999.9	-9.9	-99.9	91	10.8
98.00	9999.99	27176	999.9	-9.9	-99.9	93	9.3
99.00	9999.99	27549	999.9	-9.9	-99.9	96	8.2
99.48	16.90	27848	-46.8	-9.9	-99.9	96	7.2
100.00	9999.99	27919	999.9	-9.9	-99.9	96	6.7
101.00	9999.99	28272	999.9	-9.9	-99.9	103	6.7
101.48	15.20	28555	-44.5	-9.9	-99.9	105	7.7
102.00	9999.99	28624	999.9	-9.9	-99.9	106	7.7
103.00	9999.99	28971	999.9	-9.9	-99.9	109	7.2
103.48	13.70	29249	-45.6	-9.9	-99.9	113	7.2
104.00	9999.99	29335	999.9	-9.9	-99.9	114	7.2
105.00	9999.99	29762	999.9	-9.9	-99.9	106	6.2
106.00	9999.99	30190	999.9	-9.9	-99.9	101	4.6
107.00	9999.99	30617	999.9	-9.9	-99.9	96	5.1
107.06	11.10	30660	-43.1	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-21-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAP TIME (M /SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1009.70	18	25.4	2.5	86.0	0	.0
.06	1006.30	48	25.2	3.5	80.7	999	999.9
.18	1000.00	103	27.3	6.3	67.9	999	999.9
.30	993.00	166	28.2	7.2	64.4	999	999.9
1.00	9999.99	302	999.9	-9.9	-99.9	999	999.9
2.00	9999.99	574	999.9	-9.9	-99.9	208	4.1
2.48	925.00	792	23.1	5.7	70.0	200	3.1
3.00	9999.99	852	999.9	-9.9	-99.9	198	2.6
4.00	9999.99	1149	999.9	-9.9	-99.9	112	2.1
4.12	881.70	1209	20.3	5.6	69.8	110	2.1
5.00	9999.99	1439	999.9	-9.9	-99.9	104	2.6
5.18	850.00	1525	17.9	3.4	80.6	106	2.6
6.00	830.60	1723	16.7	4.5	74.6	110	2.6
6.42	811.40	1922	15.1	1.8	88.9	111	2.1
7.00	9999.99	2006	999.9	-9.9	-99.9	111	2.1
8.00	9999.99	2287	999.9	-9.9	-99.9	83	2.1
9.00	9999.99	2568	999.9	-9.9	-99.9	63	1.5
9.54	729.10	2821	8.8	.8	95.0	34	1.5
10.00	9999.99	2851	999.9	-9.9	-99.9	31	1.5
10.36	710.80	3032	8.3	.8	94.8	357	1.0
11.00	700.00	3159	7.2	.8	94.6	333	1.0
11.18	693.40	3237	7.3	.8	94.6	315	1.0
12.00	9999.99	3429	999.9	-9.9	-99.9	271	1.5
[illegible].54	657.30	3676	4.9	.9	94.3	268	1.0
[illegible].00	9999.99	3704	999.9	-9.9	-99.9	268	1.0
13.54	634.80	3960	3.2	2.9	81.4	210	1.5
14.00	9999.99	3993	999.9	-9.9	-99.9	203	1.5
14.24	622.10	4124	1.9	8.0	55.3	206	2.1
14.48	612.40	4251	1.0	9.1	50.7	209	2.6
15.00	9999.99	4311	999.9	-9.9	-99.9	210	3.1
15.30	596.70	4460	.5	13.2	37.0	213	3.1
16.00	585.40	4613	.1	10.4	45.6	217	3.1
16.18	578.80	4704	.1	11.4	42.4	214	3.1
17.00	9999.99	4907	999.9	-9.9	-99.9	206	2.6
17.06	562.20	4936	-1.4	11.0	43.1	205	2.6
17.30	553.60	5059	-2.2	13.6	34.9	201	2.1
17.54	545.30	5179	-2.9	8.7	51.3	198	2.1
18.00	9999.99	5208	999.9	-9.9	-99.9	197	2.1
18.30	533.50	5352	-4.1	9.3	48.6	189	1.5
18.48	528.00	5434	-4.6	30.0	20.0	184	1.0
19.00	523.90	5495	-5.0	30.0	20.0	181	1.0
20.00	9999.99	5800	999.9	-9.9	-99.9	0	.0
20.12	500.00	5861	-6.1	30.0	20.0	0	.0
20.54	487.60	6057	-7.6	30.0	20.0	293	1.0
21.00	9999.99	6087	999.9	-9.9	-99.9	285	1.0
22.00	9999.99	6390	999.9	-9.9	-99.9	294	1.5
22.36	456.30	6571	-9.8	30.0	20.0	297	2.1
23.00	9999.99	6698	999.9	-9.9	-99.9	299	2.6
24 00	9999.99	7015	999.9	-9.9	-99.9	307	3.1
2[illegible] 30	421.80	7174	-13.5	30.0	20.0	314	3.1
24.54	414.60	7305	-14.6	12.1	35.4	321	2.6
25.00	9999.99	7337	999.9	-9.9	-99.9	322	2.6
25.06	411.10	7369	-14.9	15.4	25.8	323	2.6
25.48	400.00	7575	-16.6	15.6	24.7	333	1.5

TALLAHASSEE, FLORIDA 9-21-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL[illegible] TIME (M[illegible]/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
26.00	9999.99	7651	999.9	-9.9	-99.9	336	1.5
26.06	394.00	7689	-17.5	14.4	27.5	337	1.5
27.00	9999.99	7980	999.9	-9.9	-99.9	348	2.6
27.06	377.30	8012	-19.6	30.0	20.0	347	3.1
28.00	9999.99	8295	999.9	-9.9	-99.9	334	5.1
28.54	349.40	8577	-24.3	30.0	20.0	322	6.2
29.00	9999.99	8609	999.9	-9.9	-99.9	321	6.2
29.48	336.00	8862	-25.7	30.0	20.0	323	5.1
30.00	9999.99	8922	999.9	-9.9	-99.9	323	4.6
31.00	9999.99	9222	999.9	-9.9	-99.9	344	3.6
32.00	9999.99	9521	999.9	-9.9	-99.9	358	3.6
32.30	300.00	9671	-32.7	30.0	20.0	353	4.1
33.00	9999.99	9826	999.9	-9.9	-99.9	348	4.6
34.00	9999.99	10137	999.9	-9.9	-99.9	354	6.2
34.30	274.40	10292	-38.6	30.0	20.0	359	7.2
35.00	9999.99	10450	999.9	-9.9	-99.9	5	8.7
35.12	265.70	10513	-40.0	30.0	20.0	6	9.3
36.00	9999.99	10748	999.9	-9.9	-99.9	9	11.3
36.36	250.00	10925	-43.6	-9.9	-99.9	9	11.3
37.00	9999.99	11040	999.9	-9.9	-99.9	9	11.3
38.00	9999.99	11326	999.9	-9.9	-99.9	4	11.8
39.00	9999.99	11612	999.9	-9.9	-99.9	357	12.3
40.00	9999.99	11898	999.9	-9.9	-99.9	353	14.4
[illegible].00	9999.99	12185	999.9	-9.9	-99.9	351	16.5
41.42	200.00	12385	-56.0	-9.9	-99.9	350	18.0
42.00	9999.99	12467	999.9	-9.9	-99.9	349	18.5
43.00	9999.99	12738	999.9	-9.9	-99.9	350	17.5
43.18	186.70	12820	-59.2	-9.9	-99.9	351	16.5
44.00	9999.99	13047	999.9	-9.9	-99.9	354	13.4
45.00	9999.99	13372	999.9	-9.9	-99.9	349	10.3
45.06	169.90	13404	-64.0	-9.9	-99.9	347	9.8
46.00	9999.99	13701	999.9	-9.9	-99.9	329	6.7
47.00	9999.99	14031	999.9	-9.9	-99.9	301	6.7
47.24	150.00	14163	-66.4	-9.9	-99.9	297	7.2
48.00	9999.99	14354	999.9	-9.9	-99.9	290	7.7
49.00	9999.99	14672	999.9	-9.9	-99.9	294	9.3
49.18	135.60	14767	-71.4	-9.9	-99.9	295	9.3
50.00	9999.99	14995	999.9	-9.9	-99.9	298	8.7
50.36	126.20	15191	-71.6	-9.9	-99.9	303	8.2
51.00	122.50	15366	-72.8	-9.9	-99.9	307	8.2
51.54	116.50	15661	-72.0	-9.9	-99.9	315	6.2
52.00	9999.99	15694	999.9	-9.9	-99.9	316	5.7
52.48	110.80	15956	-73.9	-9.9	-99.9	339	2.1
53.00	9999.99	16020	999.9	-9.9	-99.9	345	1.0
53.12	108.40	16083	-73.8	-9.9	-99.9	17	1.0
53.54	104.40	16304	-72.0	-9.9	-99.9	130	2.1
54.00	9999.99	16336	999.9	-9.9	-99.9	146	2.1
54.42	100.00	16557	-73.3	-9.9	-99.9	151	3.6
[illegible].00	98.20	16663	-73.3	-9.9	-99.9	153	4.1
[illegible].36	94.90	16865	-70.0	-9.9	-99.9	163	4.6
56.00	9999.99	16993	999.9	-9.9	-99.9	170	4.6
56.30	90.40	17154	-70.0	-9.9	-99.9	189	4.6
57.00	88.00	17315	-67.7	-9.9	-99.9	208	4.1
57.42	84.80	17539	-66.6	-9.9	-99.9	229	4.6

TALLAHASSEE, FLORIDA 9-21-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL? TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
58.00	9999.99	17639	999.9	-9.9	-99.9	238	4.6
58.36	80.70	17838	-66.7	-9.9	-99.9	257	4.6
59.00	9999.99	17966	999.9	-9.9	-99.9	269	4.6
59.18	77.80	18062	-62.7	-9.9	-99.9	278	4.6
59.48	75.90	18214	-62.8	-9.9	-99.9	292	4.6
60.00	9999.99	18280	999.9	-9.9	-99.9	298	4.6
60.30	73.10	18446	-61.5	-9.9	-99.9	312	4.6
61.00	9999.99	18614	999.9	-9.9	-99.9	327	5.1
61.18	70.00	18715	-61.0	-9.9	-99.9	340	5.1
62.00	9999.99	18945	999.9	-9.9	-99.9	8	5.1
63.00	9999.99	19273	999.9	-9.9	-99.9	39	4.1
63.18	63.00	19372	-59.9	-9.9	-99.9	49	3.6
64.00	9999.99	19602	999.9	-9.9	-99.9	71	2.6
65.00	9999.99	19929	999.9	-9.9	-99.9	68	3.1
65.12	57.00	19995	-61.2	-9.9	-99.9	68	2.6
66.00	9999.99	20267	999.9	-9.9	-99.9	67	1.5
67.00	9999.99	20608	999.9	-9.9	-99.9	34	1.5
67.36	50.00	20812	-59.4	-9.9	-99.9	42	2.1
68.00	9999.99	20949	999.9	-9.9	-99.9	47	2.1
69.00	9999.99	21291	999.9	-9.9	-99.9	93	2.6
70.00	9999.99	21632	999.9	-9.9	-99.9	101	3.1
71.00	9999.99	21974	999.9	-9.9	-99.9	107	4.1
71.30	40.50	22145	-55.1	-9.9	-99.9	112	4.1
.00	9999.99	22321	999.9	-9.9	-99.9	117	4.6
73.00	9999.99	22672	999.9	-9.9	-99.9	128	3.6
74.00	9999.99	23023	999.9	-9.9	-99.9	116	3.6
75.00	9999.99	23374	999.9	-9.9	-99.9	97	4.1
75.30	32.50	23550	-55.2	-9.9	-99.9	91	5.1
76.00	9999.99	23734	999.9	-9.9	-99.9	85	6.2
76.54	30.00	24064	-52.6	-9.9	-99.9	92	8.2
77.00	9999.99	24104	999.9	-9.9	-99.9	93	8.2
77.54	28.20	24465	-51.2	-9.9	-99.9	104	8.2
78.00	9999.99	24504	999.9	-9.9	-99.9	105	8.2
79.00	9999.99	24891	999.9	-9.9	-99.9	113	7.2
80.00	9999.99	25279	999.9	-9.9	-99.9	115	5.7
81.00	9999.99	25666	999.9	-9.9	-99.9	114	3.6
82.00	9999.99	26054	999.9	-9.9	-99.9	73	2.6
82.18	21.70	26170	-50.8	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-21-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL/O TIME (M /SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1011.80	18	19.5	.2	99.0	330	1.5
.12	1005.60	71	21.9	.6	96.5	999	999.9
.24	1000.00	120	22.9	.6	96.6	999	999.9
.42	991.40	196	23.6	1.1	93.9	999	999.9
1.00	9999.99	278	999.9	-9.9	-99.9	999	999.9
1.30	967.00	414	22.6	2.3	86.7	999	999.9
1.54	955.40	520	22.2	4.5	75.4	999	999.9
2.00	9999.99	545	999.9	-9.9	-99.9	212	2.6
2.06	949.90	570	22.4	7.8	60.9	211	2.6
2.48	930.00	754	21.8	9.3	55.4	200	3.6
3.00	925.00	801	21.6	7.4	62.5	197	4.1
3.48	902.70	1013	20.0	6.3	66.7	190	5.1
4.00	9999.99	1063	999.9	-9.9	-99.9	188	5.7
4.12	892.40	1112	19.0	2.5	85.3	189	5.7
4.42	880.90	1223	17.9	.9	94.8	190	6.2
5.00	873.50	1296	17.4	1.4	91.5	191	6.2
5.18	865.90	1371	17.2	4.3	75.4	190	6.2
5.54	850.00	1529	16.5	4.2	76.2	187	6.2
6.00	9999.99	1557	999.9	-9.9	-99.9	187	6.2
6.18	839.00	1640	16.0	3.9	77.6	184	6.2
6.36	831.70	1715	16.1	5.9	67.5	182	5.7
7.00	9999.99	1821	999.9	-9.9	-99.9	178	5.7
8.00	9999.99	2084 23	999.9	-9.9	-99.9	176	5.7
[illegible].12	791.30	2137	13.3	4.5	74.1	176	5.7
8.30	783.40	2222	13.0	6.5	64.4	176	5.7
9.00	9999.99	2362	999.9	-9.9	-99.9	177	5.7
9.18	762.70	2446	11.8	7.6	59.5	178	5.7
10.00	9999.99	2653	999.9	-9.9	-99.9	179	5.7
11.00	9999.99	2948	999.9	-9.9	-99.9	180	5.7
11.24	708.00	3066	7.9	4.2	74.5	187	5.7
11.42	700.00	3160	7.6	5.8	66.4	192	5.1
12.00	693.50	3237	7.5	8.4	55.2	196	5.1
13.00	671.60	3501	6.4	9.7	49.9	207	5.7
13.12	667.30	3554	6.3	12.1	41.8	205	5.7
14.00	9999.99	3771	999.9	-9.9	-99.9	197	4.6
14.24	641.30	3879	5.2	11.0	45.3	192	4.1
15.00	9999.99	4043	999.9	-9.9	-99.9	184	3.1
15.24	620.10	4153	3.6	8.2	55.1	175	3.1
16.00	9999.99	4326	999.9	-9.9	-99.9	160	2.6
16.12	602.70	4384	2.9	12.0	41.3	154	2.6
16.24	598.60	4439	2.7	10.7	45.3	149	2.6
16.42	592.50	4522	2.3	8.7	52.8	141	2.1
17.00	9999.99	4609	999.9	-9.9	-99.9	133	2.1
17.48	569.60	4840	.0	7.7	56.0	143	2.1
18.00	9999.99	4897	999.9	-9.9	-99.9	146	2.1
18.42	551.50	5098	-.8	10.9	43.7	157	2.1
19.00	9999.99	5183	999.9	-9.9	-99.9	162	2.1
19.30	536.00	5325	-2.6	10.8	43.4	156	1.5
[illegible].00	9999.99	5460	999.9	-9.9	-99.9	150	1.5
.24	519.80	5568	-3.6	13.6	34.4	140	1.5
20.42	514.40	5651	-4.0	18.3	22.7	133	1.5
21.00	9999.99	5725	999.9	-9.9	-99.9	126	1.5
21.36	500.00	5874	-5.4	30.0	20.0	119	1.5
22.00	9999.99	5982	999.9	-9.9	-99.9	114	1.5

TALLAHASSEE, FLORIDA 9-21-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL TIME (M.../SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
22.48	479.80	6197	-6.7	30.0	20.0	76	.5
23.00	9999.99	6253	999.9	-9.9	-99.9	66	.5
23.42	464.50	6449	-8.5	12.1	37.3	315	.5
24.00	9999.99	6533	999.9	-9.9	-99.9	268	.5
25.00	9999.99	6812	999.9	-9.9	-99.9	214	1.5
26.00	9999.99	7091	999.9	-9.9	-99.9	202	2.1
27.00	9999.99	7370	999.9	-9.9	-99.9	183	1.5
27.48	400.00	7593	-15.7	30.0	20.0	112	2.1
28.00	9999.99	7650	999.9	-9.9	-99.9	94	2.1
29.00	9999.99	7937	999.9	-9.9	-99.9	63	3.1
30.00	9999.99	8223	999.9	-9.9	-99.9	36	3.6
30.36	359.10	8395	-22.8	12.4	31.3	20	4.1
31.00	9999.99	8514	999.9	-9.9	-99.9	9	4.6
32.00	9999.99	8812	999.9	-9.9	-99.9	343	5.1
33.00	9999.99	9110	999.9	-9.9	-99.9	332	3.6
33.06	324.10	9140	-27.7	13.6	26.0	332	3.6
34.00	9999.99	9376	999.9	-9.9	-99.9	330	2.6
35.00	9999.99	9639	999.9	-9.9	-99.9	324	3.1
35.12	300.00	9691	-32.4	10.4	34.6	321	3.1
36.00	9999.99	9918	999.9	-9.9	-99.9	307	2.6
37.00	9999.99	10201	999.9	-9.9	-99.9	296	2.1
38.00	9999.99	10484	999.9	-9.9	-99.9	338	1.5
38.30	262.20	10626	-39.9	10.4	31.5	359	2.1
[illegible].00	9999.99	10761	999.9	-9.9	-99.9	19	2.6
39.42	250.00	10949	-42.5	-9.9	-99.9	20	3.1
40.00	9999.99	11033	999.9	-9.9	-99.9	21	3.6
41.00	9999.99	11311	999.9	-9.9	-99.9	8	4.1
42.00	9999.99	11590	999.9	-9.9	-99.9	342	4.1
42.24	223.30	11701	-49.4	-9.9	-99.9	338	4.6
43.00	9999.99	11859	999.9	-9.9	-99.9	333	5.1
44.00	9999.99	12124	999.9	-9.9	-99.9	344	5.7
45.00	9999.99	12388	999.9	-9.9	-99.9	350	6.7
45.06	200.00	12414	-55.0	-9.9	-99.9	350	6.7
46.00	9999.99	12660	999.9	-9.9	-99.9	346	7.7
47.00	9999.99	12933	999.9	-9.9	-99.9	350	9.8
48.00	9999.99	13206	999.9	-9.9	-99.9	343	12.9
48.30	172.50	13343	-62.4	-9.9	-99.9	343	13.9
49.00	9999.99	13465	999.9	-9.9	-99.9	343	14.9
49.54	163.20	13684	-64.1	-9.9	-99.9	353	14.4
50.00	9999.99	13709	999.9	-9.9	-99.9	354	14.4
50.54	156.70	13933	-64.5	-9.9	-99.9	358	11.3
51.00	9999.99	13960	999.9	-9.9	-99.9	358	10.8
51.54	150.00	14198	-66.5	-9.9	-99.9	3	8.7
52.00	9999.99	14227	999.9	-9.9	-99.9	4	8.2
53.00	9999.99	14517	999.9	-9.9	-99.9	3	5.1
54.00	9999.99	14806	999.9	-9.9	-99.9	338	4.1
54.36	131.60	14980	-71.8	-9.9	-99.9	321	4.6
55.00	9999.99	15089	999.9	-9.9	-99.9	311	5.1
5[illegible]00	9999.99	15361	999.9	-9.9	-99.9	302	6.7
5[illegible].00	9999.99	15633	999.9	-9.9	-99.9	296	6.2
57.12	116.70	15687	-72.9	-9.9	-99.9	294	5.7
57.48	113.60	15846	-71.7	-9.9	-99.9	286	4.6
58.00	9999.99	15901	999.9	-9.9	-99.9	284	4.1
58.06	112.00	15929	-71.8	-9.9	-99.9	283	4.1

TALLAHASSEE, FLORIDA 9-21-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
58.24	110.40	16014	-70.7	-9.9	-99.9	278	3.6
59.00	9999.99	16178	999.9	-9.9	-99.9	270	3.1
59.24	105.40	16288	-73.0	-9.9	-99.9	261	2.6
60.00	9999.99	16458	999.9	-9.9	-99.9	247	2.1
60.06	101.90	16486	-73.2	-9.9	-99.9	248	2.1
60.30	100.00	16596	-72.4	-9.9	-99.9	253	2.1
61.00	9999.99	16742	999.9	-9.9	-99.9	260	2.1
61.18	96.10	16830	-72.3	-9.9	-99.9	283	1.5
61.30	95.30	16879	-70.5	-9.9	-99.9	296	1.5
62.00	93.10	17019	-69.0	-9.9	-99.9	332	1.0
62.18	91.80	17103	-69.2	-9.9	-99.9	356	1.5
63.00	9999.99	17289	999.9	-9.9	-99.9	50	2.1
63.06	88.60	17315	-67.8	-9.9	-99.9	50	2.1
63.54	85.40	17536	-68.2	-9.9	-99.9	54	3.1
64.00	9999.99	17565	999.9	-9.9	-99.9	54	3.1
65.00	9999.99	17857	999.9	-9.9	-99.9	62	4.6
65.18	79.80	17945	-66.6	-9.9	-99.9	63	4.6
66.00	9999.99	18151	999.9	-9.9	-99.9	67	4.6
66.12	76.40	18210	-64.3	-9.9	-99.9	68	4.6
66.48	74.30	18380	-64.4	-9.9	-99.9	70	4.1
67.00	9999.99	18439	999.9	-9.9	-99.9	71	4.1
67.24	72.20	18556	-63.0	-9.9	-99.9	73	3.6
68.00	9999.99	18720	999.9	-9.9	-99.9	76	3.1
.06	70.00	18747	-63.3	-9.9	-99.9	74	3.1
69.00	67.20	18999	-60.2	-9.9	-99.9	53	1.0
70.00	9999.99	19310	999.9	-9.9	-99.9	344	2.1
70.18	63.00	19403	-58.7	-9.9	-99.9	350	2.6
71.00	9999.99	19617	999.9	-9.9	-99.9	5	3.6
71.12	60.30	19678	-59.4	-9.9	-99.9	10	3.6
72.00	9999.99	19915	999.9	-9.9	-99.9	29	3.1
73.00	55.40	20211	-57.6	-9.9	-99.9	60	2.6
74.00	9999.99	20519	999.9	-9.9	-99.9	77	2.6
75.00	9999.99	20826	999.9	-9.9	-99.9	90	2.6
75.06	50.00	20857	-58.7	-9.9	-99.9	88	2.6
76.00	9999.99	21159	999.9	-9.9	-99.9	68	3.1
76.18	46.90	21260	-57.9	-9.9	-99.9	64	3.6
77.00	9999.99	21472	999.9	-9.9	-99.9	55	5.1
78.00	43.20	21776	-59.2	-9.9	-99.9	53	5.7
79.00	9999.99	22110	999.9	-9.9	-99.9	54	5.7
80.00	9999.99	22443	999.9	-9.9	-99.9	56	4.6
81.00	9999.99	22777	999.9	-9.9	-99.9	63	5.7
81.06	36.70	22810	-54.4	-9.9	-99.9	64	5.7
82.00	9999.99	23117	999.9	-9.9	-99.9	77	7.2
83.00	9999.99	23458	999.9	-9.9	-99.9	89	7.2
84.00	9999.99	23798	999.9	-9.9	-99.9	96	6.7
84.54	30.00	24105	-53.1	-9.9	-99.9	100	6.2
85.00	9999.99	24142	999.9	-9.9	-99.9	101	6.2
86.00	9999.99	24507	999.9	-9.9	-99.9	95	5.7
[illegible] 30	27.40	24690	-52.8	-9.9	-99.9	86	6.7
87.00	9999.99	24868	999.9	-9.9	-99.9	78	7.2
88.00	9999.99	25224	999.9	-9.9	-99.9	71	9.8
88.06	25.10	25260	-49.3	-9.9	-99.9	71	9.8
89.00	9999.99	25613	999.9	-9.9	-99.9	75	10.8
90.00	9999.99	26005	999.9	-9.9	-99.9	82	11.3

TALLAHASSEE, FLORIDA 9-21-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELAPSED TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
91.00	9999.99	26397	999.9	-9.9	-99.9	90	11.3
91.54	20.00	26750	-49.3	-9.9	-99.9	91	10.3
92.00	9999.99	26789	999.9	-9.9	-99.9	91	10.3
93.00	9999.99	27183	999.9	-9.9	-99.9	88	10.3
94.00	9999.99	27578	999.9	-9.9	-99.9	86	10.3
95.00	9999.99	27972	999.9	-9.9	-99.9	83	9.3
95.06	16.50	28011	-49.4	-9.9	-99.9	83	9.3
96.00	9999.99	28395	999.9	-9.9	-99.9	79	9.8
97.00	14.60	28821	-45.1	-9.9	-99.9	72	8.7
98.00	9999.99	29276	999.9	-9.9	-99.9	74	9.3
99.00	9999.99	29732	999.9	-9.9	-99.9	75	9.8
99.24	12.40	29914	-44.5	-9.9	-99.9	80	9.8
100.00	9999.99	30175	999.9	-9.9	-99.9	88	10.3
100.18	11.70	30305	-42.9	-9.9	-99.9	92	10.8
101.00	9999.99	30614	999.9	-9.9	-99.9	100	11.3
102.00	9999.99	31055	999.9	-9.9	-99.9	103	11.8
102.42	10.00	31364	-43.3	-9.9	-99.9	111	11.3
103.00	9999.99	31507	999.9	-9.9	-99.9	114	10.8
104.00	9999.99	31982	999.9	-9.9	-99.9	112	9.8
104.12	9.00	32077	-41.6	-9.9	-99.9	112	9.8
105.00	9999.99	32420	999.9	-9.9	-99.9	113	8.7
105.18	8.40	32548	-38.9	-9.9	-99.9	114	8.2
106.00	8.00	32884	-38.9	-9.9	-99.9	115	6.7
[illegible].30	7.80	33058	-38.8	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-22-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1010.10	18	28.7	6.1	69.0	150	3.6
.18	1000.00	108	27.9	5.8	70.2	999	999.9
1.00	9999.99	293	999.9	-9.9	-99.9	999	999.9
2.00	9999.99	558	999.9	-9.9	-99.9	207	2.1
2.54	925.00	796	22.9	4.1	77.5	213	1.0
3.00	9999.99	822	999.9	-9.9	-99.9	214	1.0
4.00	9999.99	1078	999.9	-9.9	-99.9	41	.5
4.48	874.50	1263	18.6	1.2	92.6	69	1.0
5.00	9999.99	1332	999.9	-9.9	-99.9	76	1.0
5.48	850.00	1528	17.3	2.1	87.5	130	1.0
6.00	9999.99	1582	999.9	-9.9	-99.9	145	1.0
6.18	836.60	1664	16.2	2.0	88.0	161	1.0
6.42	826.90	1763	15.9	4.6	73.6	180	1.5
7.00	9999.99	1837	999.9	-9.9	-99.9	194	1.5
7.30	808.10	1959	14.8	5.8	67.9	198	2.1
7.48	800.60	2038	14.3	4.2	75.6	200	2.6
8.00	795.60	2091	14.3	7.5	60.6	202	3.1
8.30	783.40	2221	13.2	4.2	75.6	202	4.1
8.42	778.30	2276	13.1	7.1	61.8	201	4.6
9.00	9999.99	2355	999.9	-9.9	-99.9	201	5.1
9.12	766.20	2408	12.7	8.2	57.1	201	5.1
10.00	9999.99	2626	999.9	-9.9	-99.9	203	5.7
10.12	741.70	2680	11.0	7.0	61.9	204	5.7
[illegible]0.54	725.80	2861	10.3	8.7	54.7	208	5.7
[illegible]1.00	9999.99	2886	999.9	-9.9	-99.9	208	5.7
11.30	712.90	3010	9.4	6.3	64.5	212	5.1
11.36	710.70	3036	9.5	9.1	53.1	213	4.6
12.00	9999.99	3137	999.9	-9.9	-99.9	216	4.1
12.06	700.00	3162	9.3	13.5	38.7	218	4.1
13.00	9999.99	3374	999.9	-9.9	-99.9	232	3.6
13.18	676.60	3444	8.5	15.3	33.6	231	3.6
14.00	9999.99	3618	999.9	-9.9	-99.9	228	3.6
15.00	9999.99	3866	999.9	-9.9	-99.9	215	4.1
15.42	629.20	4040	5.0	15.4	32.1	210	4.6
16.00	9999.99	4121	999.9	-9.9	-99.9	208	5.1
16.18	616.90	4201	3.9	11.6	42.9	209	5.1
16.48	606.60	4338	3.0	13.7	36.3	210	5.1
17.00	602.40	4394	2.6	11.0	44.3	210	5.1
18.00	9999.99	4687	999.9	-9.9	-99.9	238	4.1
18.12	576.70	4745	.6	12.9	37.7	242	4.1
18.48	564.20	4921	.0	20.0	20.6	256	4.6
19.00	9999.99	4979	999.9	-9.9	-99.9	260	4.6
19.18	554.00	5067	-1.2	14.6	32.4	261	4.6
20.00	9999.99	5265	999.9	-9.9	-99.9	264	4.1
20.18	534.60	5350	-3.0	16.2	27.8	259	4.1
21.00	9999.99	5547	999.9	-9.9	-99.9	248	4.1
21.18	515.90	5632	-3.1	30.0	20.0	243	4.1
22.00	9999.99	5824	999.9	-9.9	-99.9	232	4.6
[illegible].12	500.00	5879	-5.0	30.0	20.0	230	4.6
[illegible].00	9999.99	6087	999.9	-9.9	-99.9	224	4.6
24.00	470.90	6348	-7.8	30.0	20.0	221	4.6
24.48	457.80	6567	-9.8	15.3	27.6	223	3.6
25.00	9999.99	6624	999.9	-9.9	-99.9	223	3.6
26.00	9999.99	6906	999.9	-9.9	-99.9	235	2.1

TALLAHASSEE, FLORIDA 9-22-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAP TIME (M /SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
26.42	426.80	7104	-13.7	16.8	22.8	250	1.0
27.00	9999.99	7190	999.9	-9.9	-99.9	257	.5
28.00	9999.99	7479	999.9	-9.9	-99.9	208	1.0
28.24	400.00	7594	-16.5	30.0	20.0	198	1.5
29.00	9999.99	7756	999.9	-9.9	-99.9	185	2.1
30.00	9999.99	8027	999.9	-9.9	-99.9	131	2.6
31.00	9999.99	8298	999.9	-9.9	-99.9	91	2.6
32.00	9999.99	8568	999.9	-9.9	-99.9	50	1.0
33.00	9999.99	8839	999.9	-9.9	-99.9	8	1.0
33.12	335.20	8893	-28.1	13.1	27.4	6	1.0
34.00	9999.99	9118	999.9	-9.9	-99.9	360	.5
35.00	9999.99	9399	999.9	-9.9	-99.9	212	1.0
36.00	300.00	9680	-33.8	13.7	23.4	198	2.6
37.00	9999.99	9945	999.9	-9.9	-99.9	185	3.1
38.00	9999.99	10209	999.9	-9.9	-99.9	191	4.1
38.12	275.80	10262	-39.9	12.5	24.5	191	4.1
39.00	9999.99	10466	999.9	-9.9	-99.9	193	4.6
40.00	9999.99	10720	999.9	-9.9	-99.9	180	5.1
40.48	250.00	10924	-46.5	-9.9	-99.9	170	4.6
41.00	9999.99	10971	999.9	-9.9	-99.9	168	4.6
42.00	9999.99	11204	999.9	-9.9	-99.9	171	3.6
43.00	9999.99	11437	999.9	-9.9	-99.9	171	3.1
44.00	9999.99	11670	999.9	-9.9	-99.9	151	3.1
4.42	217.50	11833	-54.3	-9.9	-99.9	145	3.1
5.00	9999.99	11909	999.9	-9.9	-99.9	142	3.1
46.00	9999.99	12162	999.9	-9.9	-99.9	102	1.5
46.48	200.00	12364	-59.5	-9.9	-99.9	70	2.1
47.00	9999.99	12416	999.9	-9.9	-99.9	62	2.1
48.00	9999.99	12674	999.9	-9.9	-99.9	80	2.6
49.00	9999.99	12933	999.9	-9.9	-99.9	101	3.6
49.36	177.80	13088	-66.7	-9.9	-99.9	95	3.1
50.00	9999.99	13202	999.9	-9.9	-99.9	90	2.6
50.42	168.80	13401	-68.1	-9.9	-99.9	360	3.1
51.00	166.40	13487	-67.1	-9.9	-99.9	321	3.6
51.36	162.40	13634	-66.7	-9.9	-99.9	312	4.6
52.00	9999.99	13740	999.9	-9.9	-99.9	306	5.7
53.00	9999.99	14004	999.9	-9.9	-99.9	293	3.6
53.24	150.00	14110	-70.2	-9.9	-99.9	292	3.1
54.00	146.00	14270	-71.5	-9.9	-99.9	290	2.1
55.00	9999.99	14534	999.9	-9.9	-99.9	299	1.5
55.36	135.90	14692	-73.2	-9.9	-99.9	308	2.1
56.00	9999.99	14799	999.9	-9.9	-99.9	314	2.1
56.42	129.20	14987	-75.3	-9.9	-99.9	329	2.1
57.00	9999.99	15079	999.9	-9.9	-99.9	337	2.1
57.06	126.50	15109	-74.2	-9.9	-99.9	342	2.1
57.24	124.40	15207	-74.2	-9.9	-99.9	359	1.5
57.54	121.50	15345	-72.2	-9.9	-99.9	22	.5
58.00	9999.99	15372	999.9	-9.9	-99.9	27	.5
[illegible].00	9999.99	15646	999.9	-9.9	-99.9	80	1.0
.18	113.90	15728	-69.8	-9.9	-99.9	90	1.5
59.54	110.80	15892	-69.1	-9.9	-99.9	110	2.1
60.00	9999.99	15917	999.9	-9.9	-99.9	113	2.1
60.36	107.60	16067	-69.4	-9.9	-99.9	115	2.6
61.00	9999.99	16157	999.9	-9.9	-99.9	116	2.6

TALLAHASSEE, FLORIDA 9-22-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAP TIME (M/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
61.06	105.60	16179	-68.3	-9.9	-99.9	999	999.9
61.54	102.30	16370	-68.0	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-22-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELAP TIME (M/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1011.80	18 V	19.1	.2	99.0	120	1.5
.24	1000.00	120	22.6	.5	97.3	999	999.9
.42	991.10	198	23.7	1.1	93.7	999	999.9
1.00	9999.99	279	999.9	-9.9	-99.9	999	999.9
2.00	9999.99	550	999.9	-9.9	-99.9	258	5.1
2.18	943.20	631	20.7	.6	96.7	254	5.1
2.30	937.90	680	20.6	1.0	94.2	251	5.1
2.36	935.20	705	20.9	4.9	73.0	250	5.7
2.54	925.00	800	21.5	9.1	55.9	245	5.7
3.00	9999.99	824	999.9	-9.9	-99.9	244	5.7
3.42	904.60	994	21.0	12.3	45.4	228	6.2
4.00	9999.99	1072	999.9	-9.9	-99.9	221	6.7
4.18	888.30	1151	19.9	11.0	49.0	220	7.2
4.42	878.00	1251	18.7	7.5	61.5	218	7.7
5.00	9999.99	1327	999.9	-9.9	-99.9	217	8.2
5.48	850.00	1529	17.3	6.7	64.4	222	8.7
6.00	9999.99	1585	999.9	-9.9	-99.9	223	8.7
6.48	822.40	1811	15.3	5.1	71.4	230	9.3
7.00	9999.99	1864	999.9	-9.9	-99.9	232	9.3
7.06	814.70	1891	14.8	6.1	66.3	232	9.3
7.24	806.90	1972	14.2	4.0	76.4	234	9.3
7.36	801.80	2026	14.2	7.2	61.6	235	9.8
8.00	9999.99	2138	999.9	-9.9	-99.9	237	9.8
(8.12	786.00	2194	13.5	7.6	59.7	238	9.8
8.24	781.00	2248	13.1	5.9	67.2	239	9.3
8.48	770.60	2360	12.3	7.2	61.2	240	8.7
9.00	765.50	2416	11.9	4.6	73.3	241	8.7
9.06	763.00	2443	11.7	4.9	71.6	242	8.7
9.12	760.50	2471	11.7	7.2	60.9	242	8.2
9.30	752.70	2557	11.6	10.1	50.1	245	7.7
9.54	743.00	2666	11.0	8.4	56.1	247	7.2
10.00	9999.99	2694	999.9	-9.9	-99.9	248	7.2
10.18	733.20	2777	11.3	14.8	35.7	247	6.7
10.24	730.80	2804	11.3	14.2	37.3	247	6.7
10.48	721.10	2916	10.9	19.7	24.4	246	6.2
11.00	9999.99	2971	999.9	-9.9	-99.9	246	5.7
11.42	700.00	3163	9.7	18.1	27.3	236	5.7
12.00	9999.99	3246	999.9	-9.9	-99.9	232	5.7
12.30	681.60	3383	8.7	15.6	32.8	228	6.2
12.48	675.30	3460	8.5	30.0	20.0	226	6.2
13.00	671.00	3513	8.4	19.9	23.3	225	6.2
14.00	9999.99	3781	999.9	-9.9	-99.9	229	6.2
14.30	639.00	3915	5.7	12.5	40.4	231	6.2
15.00	9999.99	4056	999.9	-9.9	-99.9	234	6.2
16.00	9999.99	4337	999.9	-9.9	-99.9	237	5.7
16.18	600.40	4421	2.4	15.0	32.5	235	5.7
16.48	590.00	4562	1.6	15.4	31.2	232	5.1
17.00	9999.99	4622	999.9	-9.9	-99.9	231	5.1
17.12	581.40	4681	1.6	20.2	20.7	229	5.1
.00	564.10	4923	.0	30.0	20.0	221	5.1
19.00	9999.99	5209	999.9	-9.9	-99.9	229	5.1
19.12	540.40	5266	-2.3	18.1	23.7	232	5.1
20.00	9999.99	5489	999.9	-9.9	-99.9	242	5.7
21.00	9999.99	5768	999.9	-9.9	-99.9	245	5.1

TALLAHASSEE, FLORIDA 9-22-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELAP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
21.24	500.00	5879	-5.2	30.0	20.0	240	5.1
22.00	9999.99	6042	999.9	-9.9	-99.9	233	4.6
22.18	484.60	6124	-6.4	30.0	20.0	228	4.6
23.00	9999.99	6326	999.9	-9.9	-99.9	217	4.1
24.00	9999.99	6614	999.9	-9.9	-99.9	202	4.1
25.00	9999.99	6902	999.9	-9.9	-99.9	190	4.1
26.00	9999.99	7190	999.9	-9.9	-99.9	199	3.6
26.12	418.80	7248	-14.5	30.0	20.0	203	3.6
27.00	9999.99	7479	999.9	-9.9	-99.9	218	4.1
27.24	400.00	7595	-16.4	30.0	20.0	218	4.6
28.00	9999.99	7766	999.9	-9.9	-99.9	217	5.1
28.18	386.50	7852	-18.3	30.0	20.0	214	5.7
28.42	380.40	7970	-19.2	12.2	33.4	211	5.7
29.00	9999.99	8061	999.9	-9.9	-99.9	208	6.2
29.12	372.70	8122	-20.4	13.9	27.8	207	6.2
29.36	367.00	8236	-21.1	12.5	31.6	206	6.2
30.00	9999.99	8355	999.9	-9.9	-99.9	204	6.2
30.42	351.10	8562	-22.9	30.0	20.0	207	6.7
31.00	9999.99	8654	999.9	-9.9	-99.9	208	6.7
32.00	9999.99	8960	999.9	-9.9	-99.9	213	7.7
33.00	9999.99	9266	999.9	-9.9	-99.9	219	7.2
34.00	9999.99	9572	999.9	-9.9	-99.9	219	7.2
34.24	300.00	9694	-32.0	30.0	20.0	219	7.2
35.00	9999.99	9871	999.9	-9.9	-99.9	220	6.7
36.00	9999.99	10166	999.9	-9.9	-99.9	232	5.1
37.00	9999.99	10461	999.9	-9.9	-99.9	239	5.7
37.54	258.60	10726	-39.9	13.8	20.8	237	7.2
38.00	9999.99	10752	999.9	-9.9	-99.9	237	7.2
38.48	250.00	10956	-42.2	-9.9	-99.9	239	7.7
39.00	9999.99	11008	999.9	-9.9	-99.9	240	7.7
40.00	9999.99	11267	999.9	-9.9	-99.9	244	8.2
40.48	231.40	11474	-46.9	-9.9	-99.9	246	9.3
41.00	9999.99	11525	999.9	-9.9	-99.9	247	9.8
42.00	9999.99	11782	999.9	-9.9	-99.9	249	8.2
43.00	9999.99	12039	999.9	-9.9	-99.9	238	5.1
44.00	9999.99	12296	999.9	-9.9	-99.9	218	2.6
44.30	200.00	12425	-54.1	-9.9	-99.9	208	2.6
45.00	9999.99	12560	999.9	-9.9	-99.9	197	2.6
46.00	9999.99	12829	999.9	-9.9	-99.9	196	3.6
46.42	182.20	13017	-58.7	-9.9	-99.9	193	3.1
47.00	9999.99	13106	999.9	-9.9	-99.9	192	3.1
48.00	9999.99	13401	999.9	-9.9	-99.9	190	2.1
48.18	168.90	13490	-61.0	-9.9	-99.9	163	2.1
49.00	9999.99	13686	999.9	-9.9	-99.9	102	1.5
50.00	9999.99	13966	999.9	-9.9	-99.9	86	3.6
50.54	150.00	14218	-66.7	-9.9	-99.9	85	4.6
51.00	9999.99	14247	999.9	-9.9	-99.9	85	4.6
52.00	9999.99	14536	999.9	-9.9	-99.9	90	5.1
52.42	137.50	14739	-70.4	-9.9	-99.9	95	5.7
53.00	9999.99	14819	999.9	-9.9	-99.9	97	5.7
54.00	9999.99	15084	999.9	-9.9	-99.9	102	4.1
54.54	124.60	15323	-71.2	-9.9	-99.9	90	2.1
55.00	9999.99	15351	999.9	-9.9	-99.9	89	2.1
56.00	9999.99	15626	999.9	-9.9	-99.9	33	2.6

TALLAHASSEE, FLORIDA 9-22-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL'° TIME (K./SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
57.00	9999.99	15901	999.9	-9.9	-99.9	24	2.6
57.12	111.90	15956	-73.2	-9.9	-99.9	26	2.6
57.48	108.60	16131	-73.2	-9.9	-99.9	34	3.1
58.00	9999.99	16193	999.9	-9.9	-99.9	37	3.1
58.24	105.20	16318	-71.1	-9.9	-99.9	47	3.1
58.54	102.50	16472	-71.3	-9.9	-99.9	60	3.1
59.00	9999.99	16501	999.9	-9.9	-99.9	62	3.1
59.24	100.00	16619	-70.5	-9.9	-99.9	69	3.1
60.00	9999.99	16771	999.9	-9.9	-99.9	77	3.6
60.36	95.00	16922	-71.2	-9.9	-99.9	78	4.1
61.00	93.10	17042	-71.0	-9.9	-99.9	78	4.6
61.36	90.30	17224	-69.1	-9.9	-99.9	83	5.1
62.00	9999.99	17341	999.9	-9.9	-99.9	87	5.1
63.00	9999.99	17635	999.9	-9.9	-99.9	94	5.7
64.00	9999.99	17928	999.9	-9.9	-99.9	89	6.7
64.36	77.90	18104	-70.2	-9.9	-99.9	91	6.7
65.00	9999.99	18220	999.9	-9.9	-99.9	92	6.7
65.36	74.20	18395	-67.4	-9.9	-99.9	93	7.2
66.00	9999.99	18513	999.9	-9.9	-99.9	94	7.2
66.48	70.00	18748	-65.2	-9.9	-99.9	99	7.2
67.00	9999.99	18808	999.9	-9.9	-99.9	100	7.2
68.00	9999.99	19110	999.9	-9.9	-99.9	112	6.2
69.00	9999.99	19412	999.9	-9.9	-99.9	105	4.1
70.00	9999.99	19714	999.9	-9.9	-99.9	62	3.6
71.00	9999.99	20016	999.9	-9.9	-99.9	41	5.7
72.00	9999.99	20318	999.9	-9.9	-99.9	29	6.2
73.00	9999.99	20620	959.9	-9.9	-99.9	28	7.2
73.42	50.00	20831	-58.6	-9.9	-99.9	35	6.7
74.00	9999.99	20923	999.9	-9.9	-99.9	38	6.7
75.00	9999.99	21230	999.9	-9.9	-99.9	50	5.1
75.30	45.80	21384	-56.8	-9.9	-99.9	55	5.1
76.00	9999.99	21570	999.9	-9.9	-99.9	61	5.1
77.00	9999.99	21941	999.9	-9.9	-99.9	69	5.1
78.00	9999.99	22312	999.9	-9.9	-99.9	61	4.1
79.00	9999.99	22683	999.9	-9.9	-99.9	39	4.6
80.00	35.20	23054	-56.4	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-23-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL(TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1009.70	18	28.5	5.4	72.0	160	4.1
.18	1000.00	104	27.7	5.7	70.5	999	999.9
1.00	9999.99	295	999.9	-9.9	-99.9	999	999.9
1.24	966.70	404	25.4	3.1	82.9	999	999.9
2.00	9999.99	559	999.9	-9.9	-99.9	999	999.9
2.54	925.00	792	22.8	2.7	84.6	999	999.9
3.00	9999.99	818	999.9	-9.9	-99.9	999	999.9
4.00	9999.99	1080	999.9	-9.9	-99.9	286	5.7
5.00	9999.99	1342	999.9	-9.9	-99.9	295	5.7
5.42	850.00	1525	17.3	1.8	89.4	304	5.7
6.00	9999.99	1611	999.9	-9.9	-99.9	308	5.7
6.24	830.40	1725	16.9	4.4	75.1	310	5.7
7.00	9999.99	1891	999.9	-9.9	-99.9	314	5.1
7.42	796.10	2084	14.4	5.1	71.0	306	4.6
8.00	9999.99	2165	999.9	-9.9	-99.9	303	4.1
9.00	763.60	2435	13.2	12.0	44.2	286	4.6
10.00	9999.99	2726	999.9	-9.9	-99.9	280	4.6
11.00	9999.99	3017	999.9	-9.9	-99.9	279	4.1
11.30	700.00	3162	8.9	10.6	47.6	274	4.6
11.48	693.90	3234	8.4	10.8	46.7	271	5.1
12.00	9999.99	3294	999.9	-9.9	-99.9	269	5.1
12.06	686.40	3324	7.6	6.4	63.7	268	5.1
12.42	672.30	3495	7.0	9.7	50.0	261	5.7
[illegible].00	9999.99	3582	999.9	-9.9	-99.9	257	6.2
13.24	655.80	3699	5.8	7.4	58.7	256	6.2
14.00	642.50	3867	5.1	10.4	47.0	254	6.7
14.18	636.10	3948	4.4	10.4	46.9	252	6.7
14.36	629.60	4032	3.8	8.3	54.5	249	6.7
14.42	627.40	4060	3.6	6.1	64.3	249	6.7
15.00	9999.99	4150	999.9	-9.9	-99.9	246	6.7
15.06	618.20	4180	2.6	4.7	71.0	245	6.7
15.12	616.10	4208	2.6	8.3	54.3	245	6.7
15.36	607.70	4319	2.0	9.1	51.2	242	7.2
15.42	605.70	4346	1.9	8.5	53.3	241	7.2
15.48	603.70	4372	1.7	2.6	83.0	240	7.2
15.54	601.80	4398	1.5	2.3	84.7	240	7.2
16.00	9999.99	4425	999.9	-9.9	-99.9	239	7.2
16.06	597.80	4452	1.5	3.1	79.8	239	7.2
16.12	595.80	4479	1.5	7.1	59.1	238	7.2
16.24	591.70	4534	1.3	7.8	56.0	237	7.7
16.30	589.70	4562	1.5	11.2	43.4	237	7.7
17.00	9999.99	4704	999.9	-9.9	-99.9	234	8.2
17.24	571.20	4818	1.5	14.4	33.8	230	8.2
18.00	9999.99	4998	999.9	-9.9	-99.9	223	7.7
18.12	555.20	5047	.1	13.7	35.2	222	7.2
18.24	551.10	5106	-.3	9.9	47.5	220	6.7
18.30	549.00	5137	-.5	12.3	39.2	219	6.7
19.00	9999.99	5283	999.9	-9.9	-99.9	216	5.7
[illegible].06	537.10	5312	-1.2	16.2	28.3	217	5.1
20.00	9999.99	5572	999.9	-9.9	-99.9	222	3.1
20.06	517.90	5601	-3.2	13.2	35.6	223	3.1
21.00	9999.99	5850	999.9	-9.9	-99.9	236	2.6
21.06	500.00	5878	-5.2	16.7	25.9	236	2.6
21.18	496.60	5932	-5.6	15.7	28.2	235	2.6

TALLAHASSEE, FLORIDA 9-23-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

[illegible] TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
21.24	494.70	5962	-5.8	8.3	52.1	235	2.6
21.30	492.90	5991	-6.0	6.7	59.1	235	2.6
21.36	491.00	6021	-6.2	7.1	57.1	234	3.1
21.42	489.10	6051	-6.4	10.9	41.9	234	3.1
22.00	9999.99	6140	999.9	-9.9	-99.9	233	3.1
22.24	476.30	6258	-7.9	7.9	53.0	230	3.6
23.00	466.30	6423	-8.4	12.4	36.6	225	4.1
23.30	457.80	6566	-9.1	13.1	34.2	219	4.6
23.42	454.50	6622	-9.5	9.9	44.5	217	4.6
23.54	451.20	6678	-9.8	12.9	34.5	215	5.1
24.00	9999.99	6706	999.9	-9.9	-99.9	214	5.1
24.12	446.30	6762	-10.3	12.2	36.3	214	5.1
24.42	438.10	6905	-11.3	12.0	36.7	215	5.7
25.00	433.20	6991	-12.1	8.2	50.5	215	5.7
26.00	9999.99	7294	999.9	-9.9	-99.9	218	6.2
27.00	400.00	7597	-16.0	10.6	39.8	208	6.7
27.48	387.60	7833	-17.9	10.3	40.4	210	6.7
28.00	9999.99	7891	999.9	-9.9	-99.9	211	6.7
28.18	380.20	7977	-19.2	7.5	51.5	216	6.7
28.24	378.70	8006	-19.4	6.2	58.0	217	6.7
29.00	9999.99	8175	999.9	-9.9	-99.9	226	6.2
29.06	368.80	8203	-20.7	5.1	63.5	226	6.2
[illegible]0.00	9999.99	8443	999.9	-9.9	-99.9	227	7.2
[illegible].12	354.40	8496	-22.8	6.1	57.1	226	7.2
31.00	9999.99	8718	999.9	-9.9	-99.9	222	8.2
31.06	342.50	8746	-24.8	5.2	61.5	222	8.2
31.48	333.80	8933	-26.1	6.1	56.5	220	8.2
32.00	9999.99	8989	999.9	-9.9	-99.9	220	8.2
32.24	326.10	9101	-27.0	9.2	41.5	217	8.2
33.00	9999.99	9271	999.9	-9.9	-99.9	212	8.2
34.00	9999.99	9555	999.9	-9.9	-99.9	206	9.3
34.30	300.00	9697	-31.8	9.0	40.4	204	9.3
35.00	9999.99	9837	999.9	-9.9	-99.9	203	9.3
36.00	9999.99	10118	999.9	-9.9	-99.9	203	9.8
37.00	9999.99	10398	999.9	-9.9	-99.9	202	9.8
38.00	260.50	10679	-39.9	9.0	37.1	201	7.7
39.00	250.00	10958	-42.1	-9.9	-99.9	207	6.2
40.00	9999.99	11264	999.9	-9.9	-99.9	211	5.7
41.00	9999.99	11571	999.9	-9.9	-99.9	217	5.1
42.00	9999.99	11877	999.9	-9.9	-99.9	220	5.7
43.00	9999.99	12184	999.9	-9.9	-99.9	217	6.2
43.48	200.00	12429	-54.3	-9.9	-99.9	215	6.7
44.00	9999.99	12486	999.9	-9.9	-99.9	214	6.7
45.00	9999.99	12769	999.9	-9.9	-99.9	217	7.7
45.30	185.40	12910	-58.3	-9.9	-99.9	218	8.2
46.00	9999.99	13052	999.9	-9.9	-99.9	220	8.7
47.00	9999.99	13336	999.9	-9.9	-99.9	222	7.7
48.00	9999.99	13620	999.9	-9.9	-99.9	225	5.7
[illegible].00	9999.99	13904	999.9	-9.9	-99.9	215	5.1
50.00	9999.99	14188	999.9	-9.9	-99.9	214	6.2
50.06	150.00	14216	-67.3	-9.9	-99.9	214	6.2
51.00	9999.99	14506	999.9	-9.9	-99.9	214	5.1
51.12	141.40	14570	-69.6	-9.9	-99.9	213	4.6
52.00	9999.99	14872	999.9	-9.9	-99.9	210	3.1

TALLAHASSEE, FLORIDA 9-23-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELA TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
52.12	132.70	14947	-70.5	-9.9	-99.9	204	3.1
52.36	128.40	15142	-72.0	-9.9	-99.9	188	2.6
53.00	9999.99	15285	999.9	-9.9	-99.9	176	2.1
53.12	123.80	15357	-72.8	-9.9	-99.9	162	1.5
54.00	118.70	15603	-72.9	-9.9	-99.9	116	.5
54.24	116.10	15734	-71.3	-9.9	-99.9	116	1.0
54.54	112.90	15899	-71.6	-9.9	-99.9	115	2.1
55.00	9999.99	15933	999.9	-9.9	-99.9	115	2.1
55.54	106.60	16236	-73.9	-9.9	-99.9	129	2.1
56.00	9999.99	16269	999.9	-9.9	-99.9	131	2.1
56.06	105.40	16302	-73.7	-9.9	-99.9	124	2.1
56.18	104.20	16369	-72.1	-9.9	-99.9	110	1.5
57.00	100.00	16613	-69.1	-9.9	-99.9	58	.5
57.18	98.60	16698	-68.6	-9.9	-99.9	52	1.0
58.00	9999.99	16944	999.9	-9.9	-99.9	35	3.1
58.30	91.90	17119	-68.9	-9.9	-99.9	42	4.1
59.00	9999.99	17296	999.9	-9.9	-99.9	49	5.1
59.30	86.60	17473	-70.5	-9.9	-99.9	51	5.7
60.00	9999.99	17648	999.9	-9.9	-99.9	53	5.7
60.42	80.70	17894	-68.3	-9.9	-99.9	61	5.7
61.00	9999.99	17989	999.9	-9.9	-99.9	64	5.7
61.18	78.20	18083	-68.2	-9.9	-99.9	65	5.7
62.00	9999.99	18313	999.9	-9.9	-99.9	68	5.1
[illegible].00	71.30	18641	-65.8	-9.9	-99.9	70	4.1
63.24	70.00	18753	-65.9	-9.9	-99.9	68	4.1
64.00	9999.99	18953	999.9	-9.9	-99.9	65	4.1
65.00	9999.99	19285	999.9	-9.9	-99.9	68	5.1
65.36	62.10	19485	-63.0	-9.9	-99.9	74	4.6
66.00	9999.99	19630	999.9	-9.9	-99.9	78	4.6
67.00	9999.99	19991	999.9	-9.9	-99.9	64	3.6
68.00	9999.99	20353	999.9	-9.9	-99.9	54	5.1
69.00	9999.99	20715	999.9	-9.9	-99.9	49	6.2
69.18	50.00	20823	-61.5	-9.9	-99.9	51	6.7
70.00	9999.99	21063	999.9	-9.9	-99.9	57	7.7
71.00	9999.99	21405	999.9	-9.9	-99.9	69	8.2
71.30	44.30	21576	-60.4	-9.9	-99.9	68	7.2
72.00	9999.99	21744	999.9	-9.9	-99.9	67	6.7
73.00	9999.99	22080	999.9	-9.9	-99.9	70	6.7
73.36	39.60	22281	-56.5	-9.9	-99.9	66	6.2
74.00	9999.99	22423	999.9	-9.9	-99.9	64	6.2
75.00	9999.99	22777	999.9	-9.9	-99.9	46	6.2
76.00	9999.99	23132	999.9	-9.9	-99.9	50	5.7
77.00	9999.99	23486	999.9	-9.9	-99.9	44	5.7
78.00	9999.99	23840	999.9	-9.9	-99.9	40	5.1
78.36	30.00	24053	-54.0	-9.9	-99.9	45	4.6
79.00	9999.99	24202	999.9	-9.9	-99.9	48	4.6
80.00	9999.99	24575	999.9	-9.9	-99.9	56	6.2
81.00	9999.99	24947	999.9	-9.9	-99.9	63	6.7
8[illegible].00	9999.99	25320	999.9	-9.9	-99.9	66	7.7
82.36	23.80	25543	-52.9	-9.9	-99.9	65	8.2
83.00	9999.99	25684	999.9	-9.9	-99.9	65	8.7
84.00	9999.99	26037	999.9	-9.9	-99.9	64	10.3
85.00	20.90	26390	-48.7	-9.9	-99.9	66	11.8
85.54	20.00	26679	-48.6	-9.9	-99.9	79	10.8

TALLAHASSEE, FLORIDA 9-23-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELA TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
86.00	9999.99	26720	999.9	-9.9	-99.9	81	10.8
87.00	9999.99	27130	999.9	-9.9	-99.9	81	10.3
88.00	9999.99	27540	999.9	-9.9	-99.9	94	8.2
88.30	17.00	27745	-50.2	-9.9	-99.9	101	7.7
89.00	9999.99	27981	999.9	-9.9	-99.9	110	7.2
90.00	9999.99	28453	999.9	-9.9	-99.9	78	6.7
91.00	14.20	28925	-48.3	-9.9	-99.9	76	6.7
92.00	9999.99	29333	999.9	-9.9	-99.9	53	8.7
92.18	13.10	29456	-48.8	-9.9	-99.9	52	9.3
93.00	9999.99	29754	999.9	-9.9	-99.9	51	9.8
94.00	9999.99	30181	999.9	-9.9	-99.9	57	10.3
94.12	11.60	30266	-43.2	-9.9	-99.9	57	10.3
95.00	9999.99	30647	999.9	-9.9	-99.9	57	10.3
96.00	9999.99	31123	999.9	-9.9	-99.9	70	10.3
96.18	10.00	31266	-43.1	-9.9	-99.9	999	999.9
96.48	9.60	31542	-42.8	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-23-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELAP TIME (MIN.SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1010.40	18	20.0	.2	99.0	310	1.5
.24	1000.00	108	23.2	.8	95.6	305	2.6
.42	991.40	184	24.1	1.0	94.5	300	3.6
1.00	9999.99	256	999.9	-9.9	-99.9	296	4.6
1.48	962.00	448	22.9	2.4	86.1	305	3.6
2.00	9999.99	494	999.9	-9.9	-99.9	307	3.6
2.30	944.50	609	21.6	1.2	92.7	300	3.1
2.42	938.90	661	21.7	2.9	83.3	297	3.1
3.00	9999.99	738	999.9	-9.9	-99.9	292	2.6
3.12	925.00	790	21.2	4.0	77.8	283	2.6
3.36	914.60	889	21.2	6.6	65.6	267	3.1
4.00	904.20	988	21.3	13.8	41.2	251	3.6
4.30	890.40	1121	20.8	15.8	35.7	244	3.6
4.36	887.60	1148	20.5	12.6	44.2	242	3.6
5.00	876.70	1255	19.5	10.1	51.8	236	3.6
5.42	857.90	1441	18.3	12.7	43.3	234	4.1
6.00	850.00	1520	17.6	10.6	49.7	233	4.1
6.12	844.10	1580	17.4	12.3	44.5	233	4.6
7.00	9999.99	1795	999.9	-9.9	-99.9	235	5.7
7.30	810.10	1929	14.8	9.2	54.0	240	6.2
8.00	9999.99	2062	999.9	-9.9	-99.9	245	6.7
8.54	775.10	2302	13.0	12.7	41.9	255	7.2
9.00	9999.99	2327	999.9	-9.9	-99.9	256	7.2
9.30	761.50	2451	12.1	10.0	50.5	257	6.7
10.00	749.60	2583	11.5	11.2	46.1	259	6.2
10.18	743.90	2646	11.1	8.1	57.3	261	5.7
11.00	9999.99	2818	999.9	-9.9	-99.9	265	4.1
11.06	726.70	2842	10.2	12.5	41.7	267	4.1
11.24	720.80	2909	9.8	10.9	46.7	272	4.1
11.36	715.90	2966	9.6	13.6	38.3	276	3.6
11.42	713.40	2995	9.4	11.1	46.1	278	3.6
12.00	9999.99	3073	999.9	-9.9	-99.9	284	3.6
12.18	700.00	3152	8.5	12.2	42.3	285	3.6
12.24	698.80	3166	8.4	11.6	44.0	286	3.6
12.42	692.10	3246	8.1	15.5	32.9	287	3.1
13.00	685.90	3320	7.8	12.4	41.3	288	3.1
13.36	672.70	3480	7.2	15.4	32.9	274	2.6
14.00	9999.99	3576	999.9	-9.9	-99.9	265	2.6
14.06	663.00	3600	6.2	10.6	46.7	263	2.6
14.54	645.70	3816	5.2	14.2	35.4	243	3.6
15.00	9999.99	3844	999.9	-9.9	-99.9	240	3.6
16.00	9999.99	4129	999.9	-9.9	-99.9	239	3.1
17.00	9999.99	4414	999.9	-9.9	-99.9	232	3.1
17.42	585.10	4613	.1	14.6	32.8	223	4.1
18.00	9999.99	4696	999.9	-9.9	-99.9	219	4.6
18.48	563.20	4918	-1.0	30.0	20.0	213	5.1
19.00	9999.99	4972	999.9	-9.9	-99.9	211	5.1
19.36	548.30	5132	-1.8	19.4	21.2	205	4.1
19.48	544.90	5181	-2.0	19.6	20.7	203	4.1
19.54	543.20	5206	-2.2	8.7	51.4	202	3.6
20.00	9999.99	5231	999.9	-9.9	-99.9	201	3.6
20.06	539.80	5256	-2.6	10.4	45.0	200	3.6
20.12	538.10	5281	-2.7	7.8	55.2	199	3.6
20.36	531.00	5387	-3.4	6.2	62.0	196	3.1

TALLAHASSEE, FLORIDA 9-23-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

E[illegible]P TIME ([illegible]N/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
21.00	9999.99	5493	999.9	-9.9	-99.9	193	3.1
21.06	522.20	5519	-4.2	5.3	66.2	193	3.1
21.18	518.00	5582	-4.4	7.8	54.5	194	3.1
21.42	510.80	5693	-4.9	9.0	49.5	196	2.6
22.00	9999.99	5777	999.9	-9.9	-99.9	197	2.6
22.18	500.00	5860	-6.0	7.7	54.4	206	2.6
23.00	9999.99	6046	999.9	-9.9	-99.9	225	2.6
23.24	481.70	6152	-7.7	9.1	48.1	231	2.6
24.00	9999.99	6314	999.9	-9.9	-99.9	239	3.1
25.00	9999.99	6584	999.9	-9.9	-99.9	223	4.1
25.06	453.90	6611	-11.4	4.9	66.7	223	4.1
25.30	447.80	6715	-11.9	8.1	50.9	222	4.6
25.36	446.20	6743	-12.0	6.7	57.4	221	4.6
26.00	9999.99	6851	999.9	-9.9	-99.9	220	5.1
26.30	432.20	6986	-13.5	6.5	58.0	220	5.7
27.00	9999.99	7132	999.9	-9.9	-99.9	219	6.2
27.18	419.10	7220	-14.6	12.2	35.0	218	6.2
28.00	9999.99	7399	999.9	-9.9	-99.9	217	6.7
28.18	405.10	7476	-16.7	11.9	35.2	218	6.7
28.36	400.00	7571	-17.1	14.6	27.1	220	6.7
29.00	9999.99	7679	999.9	-9.9	-99.9	222	6.7
29.24	388.70	7786	-18.7	17.1	20.5	221	6.7
29.48	382.90	7897	-19.7	12.1	33.4	220	6.7
[illegible].00	9999.99	7954	999.9	-9.9	-99.9	220	6.7
30.42	369.90	8153	-21.9	11.0	36.3	216	7.2
31.00	9999.99	8238	999.9	-9.9	-99.9	214	7.2
31.36	357.30	8407	-23.5	30.0	20.0	216	7.7
31.54	353.10	8494	-24.0	12.3	31.3	218	7.7
32.00	9999.99	8523	999.9	-9.9	-99.9	218	7.7
32.36	343.50	8694	-25.8	8.5	45.0	219	8.7
33.00	9999.99	8808	999.9	-9.9	-99.9	219	9.3
34.00	9999.99	9093	999.9	-9.9	-99.9	217	8.7
34.06	323.70	9122	-28.7	11.2	33.3	217	8.7
35.00	9999.99	9365	999.9	-9.9	-99.9	218	6.7
36.00	9999.99	9635	999.9	-9.9	-99.9	212	6.2
36.06	300.00	9662	-32.9	8.8	41.0	213	6.2
37.00	9999.99	9918	999.9	-9.9	-99.9	218	7.2
38.00	9999.99	10202	999.9	-9.9	-99.9	229	7.7
39.00	9999.99	10486	999.9	-9.9	-99.9	230	7.7
39.06	265.30	10514	-39.9	9.6	34.9	230	7.7
40.00	9999.99	10773	999.9	-9.9	-99.9	229	7.2
40.30	250.00	10917	-43.1	-9.9	-99.9	230	6.7
41.00	9999.99	11050	999.9	-9.9	-99.9	230	6.2
42.00	9999.99	11317	999.9	-9.9	-99.9	227	5.7
43.00	9999.99	11583	999.9	-9.9	-99.9	223	7.7
44.00	9999.99	11850	999.9	-9.9	-99.9	218	8.7
45.00	9999.99	12116	999.9	-9.9	-99.9	216	8.7
46.00	200.00	12383	-54.7	-9.9	-99.9	217	8.2
[illegible].00	9999.99	12663	999.9	-9.9	-99.9	216	8.2
[illegible].00	9999.99	12944	999.9	-9.9	-99.9	217	8.7
48.18	180.60	13028	-60.0	-9.9	-99.9	217	9.3
49.00	9999.99	13233	999.9	-9.9	-99.9	216	9.8
50.00	9999.99	13525	999.9	-9.9	-99.9	217	9.8
50.42	161.20	13730	-64.4	-9.9	-99.9	225	7.7

TALLAHASSEE, FLORIDA 9-23-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EU TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
51.00	9999.99	13818	999.9	-9.9	-99.9	229	6.7
52.00	9999.99	14110	999.9	-9.9	-99.9	254	3.1
52.12	150.00	14168	-66.4	-9.9	-99.9	264	3.1
53.00	9999.99	14376	999.9	-9.9	-99.9	298	2.1
54.00	9999.99	14637	999.9	-9.9	-99.9	340	1.5
54.06	138.20	14663	-67.9	-9.9	-99.9	345	1.5
55.00	9999.99	14905	999.9	-9.9	-99.9	33	1.5
55.42	128.60	15093	-70.2	-9.9	-99.9	48	1.0
56.00	9999.99	15167	999.9	-9.9	-99.9	54	1.0
56.30	124.40	15291	-70.0	-9.9	-99.9	62	1.5
57.00	9999.99	15433	999.9	-9.9	-99.9	71	2.1
57.36	118.00	15604	-71.7	-9.9	-99.9	80	2.6
58.00	9999.99	15721	999.9	-9.9	-99.9	86	3.1
58.06	115.10	15750	-71.8	-9.9	-99.9	88	3.1
59.00	9999.99	15991	999.9	-9.9	-99.9	106	2.6
60.00	9999.99	16259	999.9	-9.9	-99.9	88	2.1
60.30	103.30	16393	-68.8	-9.9	-99.9	75	2.1
61.00	9999.99	16532	999.9	-9.9	-99.9	62	2.1
61.12	100.00	16587	-69.4	-9.9	-99.9	64	2.1
62.00	9999.99	16832	999.9	-9.9	-99.9	73	2.6
62.24	94.00	16954	-71.8	-9.9	-99.9	82	2.6
63.00	9999.99	17137	999.9	-9.9	-99.9	95	2.6
[illegible]3.12	90.20	17198	-70.8	-9.9	-99.9	94	2.6
[illegible]4.00	9999.99	17410	999.9	-9.9	-99.9	91	3.1
64.54	83.60	17649	-70.5	-9.9	-99.9	85	3.6
65.00	9999.99	17676	999.9	-9.9	-99.9	84	3.6
66.00	9999.99	17947	999.9	-9.9	-99.9	70	4.1
66.36	77.40	18110	-67.5	-9.9	-99.9	60	5.1
67.00	9999.99	18229	999.9	-9.9	-99.9	53	5.7
67.36	73.70	18407	-64.5	-9.9	-99.9	55	6.7
68.00	9999.99	18525	999.9	-9.9	-99.9	57	7.7
68.12	71.60	18584	-64.3	-9.9	-99.9	58	7.7
68.42	70.00	18722	-63.4	-9.9	-99.9	59	7.7
69.00	9999.99	18813	999.9	-9.9	-99.9	60	7.7
70.00	9999.99	19117	999.9	-9.9	-99.9	63	8.7
71.00	9999.99	19420	999.9	-9.9	-99.9	64	8.7
72.00	9999.99	19724	999.9	-9.9	-99.9	68	7.2
73.00	9999.99	20028	999.9	-9.9	-99.9	72	5.1
74.00	9999.99	20331	999.9	-9.9	-99.9	56	3.6
75.00	9999.99	20635	999.9	-9.9	-99.9	42	4.1
75.36	50.00	20817	-57.9	-9.9	-99.9	41	4.6
76.00	9999.99	20946	999.9	-9.9	-99.9	41	5.1
77.00	9999.99	21267	999.9	-9.9	-99.9	51	6.2
78.00	9999.99	21589	999.9	-9.9	-99.9	72	5.7
78.36	42.90	21782	-57.8	-9.9	-99.9	81	5.7
79.00	9999.99	21915	999.9	-9.9	-99.9	87	5.7
79.42	40.50	22147	-56.3	-9.9	-99.9	89	6.2
80.00	9999.99	22254	999.9	-9.9	-99.9	90	6.2
[illegible].00	9999.99	22609	999.9	-9.9	-99.9	84	6.2
82.00	9999.99	22964	999.9	-9.9	-99.9	70	8.2
82.06	35.40	22999	-57.9	-9.9	-99.9	70	8.2
83.00	9999.99	23335	999.9	-9.9	-99.9	69	9.8
83.42	32.20	23597	-56.9	-9.9	-99.9	69	9.8
84.00	9999.99	23701	999.9	-9.9	-99.9	69	9.8

TALLAHASSEE, FLORIDA 9-23-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELAPSED TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
85.00	30.00	24049	-53.8	-9.9	-99.9	67	9.8
86.00	9999.99	24385	999.9	-9.9	-99.9	65	9.8
86.24	27.90	24519	-50.5	-9.9	-99.9	65	9.8
87.00	9999.99	24735	999.9	-9.9	-99.9	64	9.3
88.00	9999.99	25096	999.9	-9.9	-99.9	66	8.7
88.54	24.30	25420	-50.5	-9.9	-99.9	68	7.7
89.00	9999.99	25459	999.9	-9.9	-99.9	68	7.7
90.00	9999.99	25846	999.9	-9.9	-99.9	73	7.7
91.00	9999.99	26234	999.9	-9.9	-99.9	71	8.2
92.00	9999.99	26621	999.9	-9.9	-99.9	78	7.7
92.12	20.00	26699	-47.3	-9.9	-99.9	80	7.7
93.00	9999.99	27064	999.9	-9.9	-99.9	87	8.7
94.00	9999.99	27520	999.9	-9.9	-99.9	102	7.2
94.24	17.20	27702	-45.5	-9.9	-99.9	105	6.2
95.00	9999.99	27949	999.9	-9.9	-99.9	109	4.6
96.00	9999.99	28361	999.9	-9.9	-99.9	78	2.6
97.00	9999.99	28773	999.9	-9.9	-99.9	32	2.6
98.00	9999.99	29185	999.9	-9.9	-99.9	19	5.7
99.00	9999.99	29597	999.9	-9.9	-99.9	23	6.2
99.42	12.40	29885	-45.5	-9.9	-99.9	29	6.7
100.00	9999.99	30006	999.9	-9.9	-99.9	32	7.2
101.00	9999.99	30408	999.9	-9.9	-99.9	40	8.2
101.24	11.20	30569	-41.8	-9.9	-99.9	48	8.7
1[illegible].00	9999.99	30857	999.9	-9.9	-99.9	61	9.3
103.00	10.00	31338	-42.2	-9.9	-99.9	66	11.8
104.00	9999.99	31857	999.9	-9.9	-99.9	76	14.9
104.06	9.20	31909	-37.2	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-24-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAP TIME (MIN.SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1008.70	18	26.6	3.1	83.0	230	2.1
.18	1000.00	95	25.9	3.2	82.2	237	2.6
.36	990.50	179	26.1	5.2	72.6	245	3.1
1.00	977.90	292	25.1	3.7	79.9	255	4.1
2.00	9999.99	579	999.9	-9.9	-99.9	264	3.1
2.42	925.00	780	22.2	3.0	83.0	277	2.1
3.00	9999.99	863	999.9	-9.9	-99.9	282	1.5
4.00	9999.99	1138	999.9	-9.9	-99.9	342	.5
4.18	879.30	1220	18.8	1.1	93.6	5	1.0
4.42	868.30	1329	18.2	1.6	90.6	36	1.5
5.00	860.20	1409	18.1	3.7	78.6	59	2.1
5.24	850.00	1512	17.4	3.6	79.0	64	2.1
5.48	837.40	1639	16.8	4.7	73.5	71	2.1
6.00	9999.99	1697	999.9	-9.9	-99.9	74	2.1
6.12	826.10	1755	15.7	3.2	80.9	79	2.1
7.00	804.40	1981	14.7	6.7	63.7	99	2.6
7.18	796.70	2063	14.0	3.5	79.2	106	2.6
7.30	791.50	2118	13.7	3.3	80.3	110	2.6
8.00	9999.99	2258	999.9	-9.9	-99.9	122	2.6
8.30	765.60	2398	11.7	2.7	83.3	130	2.1
8.36	763.10	2426	11.7	4.7	72.8	131	2.1
8.54	755.70	2508	11.4	5.6	68.1	135	2.1
9.00	9999.99	2536	999.9	-9.9	-99.9	137	2.1
9.30	740.60	2676	10.0	4.6	73.0	153	1.5
10.00	9999.99	2813	999.9	-9.9	-99.9	169	1.5
10.18	721.40	2895	9.3	7.9	57.5	184	1.5
11.00	9999.99	3113	999.9	-9.9	-99.9	223	1.5
11.06	700.00	3144	7.9	7.7	58.1	231	1.5
11.24	693.60	3220	7.5	9.6	50.5	249	1.5
11.48	683.90	3336	6.7	8.9	53.2	278	1.5
11.54	681.40	3366	6.5	7.2	59.7	285	1.5
12.00	679.00	3395	6.3	3.6	77.4	292	1.5
12.24	669.10	3515	5.6	5.5	67.5	295	2.6
13.00	9999.99	3694	999.9	-9.9	-99.9	299	3.6
14.00	631.00	3993	2.9	3.0	80.8	293	4.6
14.12	626.20	4055	2.9	4.6	71.4	290	4.6
14.42	614.80	4204	2.4	3.9	75.2	283	4.1
15.00	9999.99	4294	999.9	-9.9	-99.9	279	4.1
15.18	601.20	4385	1.9	6.2	63.3	272	4.1
16.00	585.50	4598	.5	6.5	61.8	255	4.1
16.30	574.50	4751	.4	5.0	68.7	242	4.6
16.54	566.50	4863	.1	5.8	65.0	232	5.1
17.00	9999.99	4894	999.9	-9.9	-99.9	229	5.1
17.54	544.80	5176	-1.4	7.8	55.2	222	6.2
18.00	9999.99	5206	999.9	-9.9	-99.9	221	6.2
18.42	528.80	5413	-3.4	6.2	62.2	224	6.7
19.00	522.60	5506	-3.1	8.9	50.3	226	7.2
20.00	9999.99	5823	999.9	-9.9	-99.9	222	7.7
20.06	500.00	5855	-5.4	7.4	56.0	222	7.7
21.00	9999.99	6135	999.9	-9.9	-99.9	218	8.2
21.12	478.60	6197	-7.6	6.7	58.6	218	8.2
22.00	9999.99	6448	999.9	-9.9	-99.9	220	7.7
22.30	454.00	6605	-11.4	3.1	77.7	214	6.7
23.00	445.10	6757	-12.4	2.2	83.7	209	5.7

TALLAHASSEE, FLORIDA 9-29-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL[illegible] TIME (M[illegible]/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
23.18	440.10	6844	-12.7	3.7	73.6	212	5.1
23.54	430.10	7019	-13.9	3.0	77.8	219	3.6
24.00	9999.99	7049	999.9	-9.9	-99.9	220	3.1
24.24	421.60	7170	-14.7	4.6	67.9	243	3.1
25.00	9999.99	7346	999.9	-9.9	-99.9	276	3.1
25.12	408.70	7405	-16.6	3.0	77.2	279	3.1
25.30	404.20	7488	-17.0	3.8	72.1	282	3.6
25.48	400.00	7567	-17.7	2.3	82.3	286	4.1
26.00	9999.99	7624	999.9	-9.9	-99.9	288	4.1
26.06	395.40	7653	-18.4	2.3	82.1	288	4.1
26.12	393.90	7681	-18.6	3.0	77.0	287	4.6
26.24	390.90	7738	-18.8	7.4	51.9	287	5.1
26.54	384.10	7869	-19.9	1.8	85.9	285	6.2
27.00	9999.99	7895	999.9	-9.9	-99.9	285	6.2
27.42	373.50	8076	-20.9	1.7	86.0	286	6.2
28.00	9999.99	8155	999.9	-9.9	-99.9	287	6.2
28.18	365.60	8234	-21.9	5.3	62.2	290	6.2
28.48	358.80	8372	-22.9	4.8	64.6	296	6.2
29.00	9999.99	8426	999.9	-9.9	-99.9	298	6.2
29.24	351.00	8533	-23.6	13.4	28.2	301	7.2
30.00	9999.99	8706	999.9	-9.9	-99.9	305	8.7
31.00	9999.99	8996	999.9	-9.9	-99.9	310	10.3
31.42	320.10	9198	-29.9	10.7	34.6	310	10.8
[illegible].00	9999.99	9290	999.9	-9.9	-99.9	310	10.8
33.00	9999.99	9597	999.9	-9.9	-99.9	302	11.3
33.12	300.00	9658	-32.5	10.7	33.4	301	11.3
34.00	9999.99	9895	999.9	-9.9	-99.9	296	12.3
35.00	9999.99	10192	999.9	-9.9	-99.9	293	13.4
35.54	267.30	10459	-40.0	8.6	39.1	291	12.9
36.00	9999.99	10491	999.9	-9.9	-99.9	291	12.9
37.00	9999.99	10815	999.9	-9.9	-99.9	288	11.3
37.18	250.00	10912	-43.7	-9.9	-99.9	285	10.3
38.00	9999.99	11134	999.9	-9.9	-99.9	279	8.7
39.00	9999.99	11451	999.9	-9.9	-99.9	259	7.2
40.00	9999.99	11768	999.9	-9.9	-99.9	252	8.7
41.00	9999.99	12086	999.9	-9.9	-99.9	248	11.3
41.54	200.00	12371	-56.2	-9.9	-99.9	242	13.4
42.00	9999.99	12404	999.9	-9.9	-99.9	241	13.9
43.00	188.80	12735	-59.2	-9.9	-99.9	235	15.4
44.00	9999.99	13102	999.9	-9.9	-99.9	235	17.5
45.00	9999.99	13468	999.9	-9.9	-99.9	234	14.4
45.54	158.70	13798	-69.2	-9.9	-99.9	239	9.8
46.00	9999.99	13829	999.9	-9.9	-99.9	239	9.3
47.00	150.00	14135	-68.6	-9.9	-99.9	258	7.2
48.00	9999.99	14446	999.9	-9.9	-99.9	282	6.7
48.18	140.20	14539	-69.4	-9.9	-99.9	288	6.7
49.00	9999.99	14755	999.9	-9.9	-99.9	301	6.2
49.06	134.50	14786	-71.3	-9.9	-99.9	304	6.2
[illegible].00	9999.99	15053	999.9	-9.9	-99.9	327	5.1
[illegible].06	127.90	15083	-72.3	-9.9	-99.9	329	5.1
50.30	125.10	15213	-71.4	-9.9	-99.9	338	4.6
51.00	9999.99	15376	999.9	-9.9	-99.9	349	3.6
51.06	121.00	15409	-72.7	-9.9	-99.9	355	3.6
52.00	9999.99	15663	999.9	-9.9	-99.9	42	3.1

TALLAHASSEE, FLORIDA 9-24-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
52.12	114.80	15719	-71.6	-9.9	-99.9	48	3.6
53.00	9999.99	15962	999.9	-9.9	-99.9	73	4.6
53.24	107.90	16083	-73.4	-9.9	-99.9	77	4.6
54.00	9999.99	16263	999.9	-9.9	-99.9	82	5.1
54.06	104.10	16293	-73.3	-9.9	-99.9	83	5.1
54.54	100.00	16529	-71.5	-9.9	-99.9	87	4.6
55.00	9999.99	16557	999.9	-9.9	-99.9	88	4.6
55.54	95.30	16813	-72.7	-9.9	-99.9	76	4.6
56.00	9999.99	16844	999.9	-9.9	-99.9	74	4.6
57.00	90.00	17149	-72.1	-9.9	-99.9	88	5.1
58.00	85.30	17464	-73.2	-9.9	-99.9	100	4.6
59.00	9999.99	17750	999.9	-9.9	-99.9	98	5.7
59.24	79.70	17865	-70.5	-9.9	-99.9	102	5.7
59.42	78.60	17948	-69.2	-9.9	-99.9	104	5.7
60.00	9999.99	18032	999.9	-9.9	-99.9	107	5.7
61.00	9999.99	18312	999.9	-9.9	-99.9	103	4.1
61.12	73.30	18368	-65.5	-9.9	-99.9	99	4.1
61.30	72.20	18460	-65.0	-9.9	-99.9	91	4.1
62.00	9999.99	18618	999.9	-9.9	-99.9	79	3.6
62.06	70.00	18649	-65.6	-9.9	-99.9	76	3.6
63.00	9999.99	18936	999.9	-9.9	-99.9	44	4.1
64.00	9999.99	19255	999.9	-9.9	-99.9	40	5.1
65.00	9999.99	19574	999.9	-9.9	-99.9	39	6.7
[illegible].00	9999.99	19893	999.9	-9.9	-99.9	48	6.7
67.00	9999.99	20212	999.9	-9.9	-99.9	65	6.2
68.00	9999.99	20532	999.9	-9.9	-99.9	76	4.6
68.36	50.00	20723	-59.7	-9.9	-99.9	84	4.1
69.00	9999.99	20862	999.9	-9.9	-99.9	89	3.6
69.48	46.80	21139	-58.0	-9.9	-99.9	87	5.1
70.00	9999.99	21214	999.9	-9.9	-99.9	86	5.7
71.00	9999.99	21587	999.9	-9.9	-99.9	96	5.7
71.30	42.30	21773	-59.6	-9.9	-99.9	94	5.7
72.00	9999.99	21964	999.9	-9.9	-99.9	92	6.2
73.00	9999.99	22346	999.9	-9.9	-99.9	91	6.2
74.00	9999.99	22728	999.9	-9.9	-99.9	90	4.1
74.24	35.50	22861	-55.3	-9.9	-99.9	88	4.6
75.00	9999.99	23120	999.9	-9.9	-99.9	86	5.1
76.00	9999.99	23519	999.9	-9.9	-99.9	81	5.7
77.00	9999.99	23918	999.9	-9.9	-99.9	83	7.7
77.06	30.00	23958	-54.2	-9.9	-99.9	83	7.7
78.00	9999.99	24325	999.9	-9.9	-99.9	84	7.7
79.00	9999.99	24734	999.9	-9.9	-99.9	74	7.7
80.00	9999.99	25142	999.9	-9.9	-99.9	74	8.2
80.30	24.20	25346	-50.8	-9.9	-99.9	76	7.2
81.00	23.50	25538	-48.8	-9.9	-99.9	77	6.7
82.00	9999.99	25980	999.9	-9.9	-99.9	83	5.1
83.00	9999.99	26422	999.9	-9.9	-99.9	94	4.6
83.24	20.00	26599	-48.8	-9.9	-99.9	104	4.1
[illegible]48	19.60	26731	-49.4	-9.9	-99.9	111	3.6
8[illegible].00	9999.99	26812	999.9	-9.9	-99.9	115	3.1
85.00	18.20	27219	-47.2	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-24-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELA[illegible] TIME (M[illegible] /SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1011.60	18	23.5	.7	96.0	5	3.1
.24	1000.00	119	23.1	.7	96.2	999	999.9
.48	989.10	215	22.3	.6	96.4	999	999.9
1.00	9999.99	270	999.9	-9.9	-99.9	999	999.9
2.00	952.30	546	21.7	.6	96.2	999	999.9
2.18	944.60	617	21.1	1.2	92.7	999	999.9
2.36	936.20	695	20.9	4.1	77.3	999	999.9
2.48	930.60	747	21.0	5.5	70.4	999	999.9
3.00	925.00	799	22.2	6.0	68.2	999	999.9
3.42	905.10	988	20.8	4.1	77.0	999	999.9
4.00	9999.99	1065	999.9	-9.9	-99.9	150	4.1
4.24	886.60	1167	19.6	5.5	70.1	152	4.1
4.54	872.90	1301	18.4	1.3	92.5	154	4.6
5.00	9999.99	1330	999.9	-9.9	-99.9	155	4.6
5.42	850.00	1529	16.3	.6	96.3	160	5.1
6.00	842.60	1604	16.0	1.0	94.0	162	5.1
6.06	840.00	1630	16.0	3.1	81.5	162	5.1
6.30	829.30	1740	15.5	6.3	65.9	162	5.1
6.42	823.80	1796	15.4	6.3	65.9	162	4.6
7.00	9999.99	1878	999.9	-9.9	-99.9	162	4.6
7.18	808.00	1960	14.2	4.8	72.7	162	4.6
8.00	9999.99	2153	999.9	-9.9	-99.9	161	5.1
8.24	779.40	2264	12.4	6.3	65.1	165	5.1
(.30	776.90	2291	12.2	5.9	66.7	165	5.1
8.42	771.50	2350	11.8	2.3	85.8	167	5.1
9.00	763.90	2433	11.4	5.4	68.9	170	5.1
9.12	759.50	2481	10.9	3.8	77.4	172	5.1
9.24	754.80	2533	10.5	2.9	82.2	174	5.1
9.36	749.50	2592	10.3	6.6	63.2	176	5.1
9.48	744.40	2649	10.0	3.8	76.9	179	5.1
9.54	742.00	2676	9.8	5.4	69.0	180	5.1
10.00	9999.99	2703	999.9	-9.9	-99.9	181	5.1
10.36	725.30	2865	8.8	6.9	61.5	181	4.6
11.00	715.50	2977	8.1	4.6	72.6	181	4.6
11.24	705.90	3089	7.7	8.4	55.3	179	4.1
11.36	700.00	3158	7.4	7.5	58.7	177	3.6
11.54	693.40	3236	7.1	8.0	56.7	176	3.1
12.00	9999.99	3265	999.9	-9.9	-99.9	175	3.1
12.12	686.20	3322	7.0	17.3	28.3	177	3.1
13.00	668.20	3540	5.8	10.2	48.0	186	2.6
13.30	656.90	3680	5.3	13.0	38.9	203	2.6
13.36	654.70	3707	5.2	7.3	59.0	206	2.6
13.42	652.50	3735	5.0	6.0	65.0	209	2.6
14.00	9999.99	3819	999.9	-9.9	-99.9	219	2.6
14.18	639.20	3903	3.9	11.8	42.3	226	3.1
14.24	637.00	3931	3.7	11.5	43.2	228	3.1
14.30	634.80	3959	3.5	6.3	63.1	231	3.1
15.00	623.50	4104	2.6	5.6	66.3	243	3.6
1[illegible] 12	619.40	4158	2.4	6.7	63.0	247	3.6
1. 18	617.30	4185	2.4	11.0	44.3	249	3.6
15.30	613.10	4241	2.3	13.9	35.4	253	3.6
16.00	9999.99	4382	999.9	-9.9	-99.9	264	4.1
16.12	598.20	4439	1.5	10.6	45.6	266	4.1
16.24	594.00	4496	1.2	13.0	37.6	268	4.1

TALLAHASSEE, FLORIDA 9-24-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL/ TIME (M /SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
16.36	589.70	4554	.8	8.7	52.3	269	4.6
17.00	581.40	4668	.0	6.9	59.7	273	4.6
17.18	575.20	4754	-.5	9.0	50.9	269	4.6
17.48	565.00	4897	-1.4	6.8	59.9	263	4.6
18.00	561.00	4954	-1.5	8.5	52.3	261	4.6
18.12	557.00	5011	-1.4	15.5	30.0	260	4.6
18.36	548.80	5129	-2.0	15.0	31.1	259	4.1
18.42	546.60	5161	-2.2	12.3	38.9	259	4.1
19.00	9999.99	5249	999.9	-9.9	-99.9	258	3.6
19.06	538.60	5278	-2.3	17.7	24.5	259	3.6
19.36	528.40	5429	-3.5	17.1	25.5	262	3.1
19.48	524.20	5492	-3.8	30.0	20.0	264	3.1
20.00	520.00	5556	-4.0	30.0	20.0	265	3.1
20.48	504.30	5797	-5.6	30.0	20.0	252	2.6
21.00	500.00	5864	-6.0	17.7	23.4	249	2.6
21.36	489.30	6033	-7.0	30.0	20.0	253	2.6
22.00	9999.99	6151	999.9	-9.9	-99.9	255	2.6
22.48	467.60	6386	-8.1	30.0	20.0	281	4.1
23.00	9999.99	6445	999.9	-9.9	-99.9	287	4.6
24.00	9999.99	6741	999.9	-9.9	-99.9	307	7.2
24.24	439.80	6859	-11.7	15.4	26.9	305	7.2
24.54	431.20	7010	-13.1	8.9	47.3	303	7.7
25.00	9999.99	7042	999.9	-9.9	-99.9	302	7.7
[illegible].24	422.20	7170	-14.1	12.1	35.5	296	7.2
[illegible].00	9999.99	7345	999.9	-9.9	-99.9	288	6.2
26.48	400.00	7578	-17.8	10.9	38.2	291	5.1
27.00	396.90	7636	-18.1	11.6	35.6	292	4.6
27.24	390.20	7763	-19.0	6.5	56.3	299	5.1
27.42	385.50	7853	-19.7	9.8	41.5	303	5.1
28.00	380.90	7942	-20.4	9.8	41.5	308	5.7
28.30	373.80	8081	-21.1	5.1	63.2	313	6.2
29.00	9999.99	8225	999.9	-9.9	-99.9	318	7.2
29.18	362.30	8311	-22.4	10.0	40.0	315	7.2
30.00	9999.99	8518	999.9	-9.9	-99.9	308	7.2
30.12	349.40	8577	-24.6	10.2	38.4	304	6.7
31.00	9999.99	8804	999.9	-9.9	-99.9	291	5.1
31.24	333.30	8918	-27.7	7.6	48.4	286	4.6
32.00	9999.99	9087	999.9	-9.9	-99.9	278	4.1
32.06	324.30	9115	-28.8	12.1	30.2	278	4.1
33.00	9999.99	9368	999.9	-9.9	-99.9	274	6.2
33.42	304.40	9565	-32.3	12.4	27.7	275	7.2
34.00	9999.99	9642	999.9	-9.9	-99.9	275	7.7
34.06	300.00	9667	-32.9	30.0	20.0	275	7.7
35.00	9999.99	9912	999.9	-9.9	-99.9	270	8.7
36.00	9999.99	10184	999.9	-9.9	-99.9	266	9.3
36.06	277.50	10211	-37.0	30.0	20.0	266	9.3
37.00	9999.99	10487	999.9	-9.9	-99.9	265	9.3
37.06	265.40	10518	-40.0	30.0	20.0	265	9.3
3[illegible].00	9999.99	10798	999.9	-9.9	-99.9	263	10.3
3[illegible].24	250.00	10922	-43.9	-9.9	-99.9	264	11.3
39.00	9999.99	11108	999.9	-9.9	-99.9	266	12.3
39.12	240.90	11170	-46.1	-9.9	-99.9	266	12.3
40.00	9999.99	11395	999.9	-9.9	-99.9	267	12.9
40.06	231.90	11423	-47.5	-9.9	-99.9	266	12.9

TALLAHASSEE, FLORIDA 9-24-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELA TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
41.00	9999.99	11693	999.9	-9.9	-99.9	257	11.8
42.00	9999.99	11992	999.9	-9.9	-99.9	249	11.8
43.00	9999.99	12292	999.9	-9.9	-99.9	246	12.3
43.18	200.00	12382	-56.0	-9.9	-99.9	244	12.3
44.00	9999.99	12561	999.9	-9.9	-99.9	241	12.3
45.00	9999.99	12817	999.9	-9.9	-99.9	241	11.3
46.00	9999.99	13073	999.9	-9.9	-99.9	244	11.3
46.06	178.40	13099	-62.0	-9.9	-99.9	245	11.3
47.00	9999.99	13328	999.9	-9.9	-99.9	257	12.3
47.06	171.20	13353	-63.8	-9.9	-99.9	259	12.3
47.54	165.30	13568	-63.5	-9.9	-99.9	278	12.9
48.00	9999.99	13596	999.9	-9.9	-99.9	280	12.9
49.00	9999.99	13878	999.9	-9.9	-99.9	294	11.8
50.00	150.00	14159	-67.5	-9.9	-99.9	284	8.2
50.42	144.30	14392	-67.7	-9.9	-99.9	280	7.2
51.00	9999.99	14475	999.9	-9.9	-99.9	279	6.7
51.48	137.10	14698	-70.1	-9.9	-99.9	280	5.7
52.00	9999.99	14752	999.9	-9.9	-99.9	280	5.1
53.00	9999.99	15024	999.9	-9.9	-99.9	300	4.6
53.24	127.40	15132	-72.4	-9.9	-99.9	309	4.6
54.00	9999.99	15280	999.9	-9.9	-99.9	322	5.1
54.12	123.20	15329	-72.5	-9.9	-99.9	327	5.1
54.36	121.20	15426	-71.4	-9.9	-99.9	336	5.1
[illegible] 00	9999.99	15523	999.9	-9.9	-99.9	345	5.1
56.00	9999.99	15766	999.9	-9.9	-99.9	12	4.6
56.12	113.50	15814	-70.9	-9.9	-99.9	17	4.6
56.30	112.10	15888	-70.2	-9.9	-99.9	25	4.6
57.00	9999.99	16032	999.9	-9.9	-99.9	41	4.6
57.30	106.80	16175	-71.2	-9.9	-99.9	54	5.1
58.00	9999.99	16305	999.9	-9.9	-99.9	66	5.1
59.00	100.00	16565	-70.2	-9.9	-99.9	89	5.7
60.00	9999.99	16839	999.9	-9.9	-99.9	112	4.6
60.48	92.00	17059	-71.4	-9.9	-99.9	113	3.1
61.00	9999.99	17116	999.9	-9.9	-99.9	113	2.6
61.24	89.40	17230	-69.3	-9.9	-99.9	98	2.6
61.54	87.30	17372	-69.6	-9.9	-99.9	80	2.6
62.00	9999.99	17399	999.9	-9.9	-99.9	77	2.6
62.36	84.60	17559	-68.8	-9.9	-99.9	63	3.1
63.00	9999.99	17668	999.9	-9.9	-99.9	54	3.6
64.00	9999.99	17940	999.9	-9.9	-99.9	37	5.1
64.42	76.90	18131	-68.3	-9.9	-99.9	44	5.7
65.00	9999.99	18214	999.9	-9.9	-99.9	47	6.2
65.30	74.10	18353	-69.0	-9.9	-99.9	53	6.7
66.00	9999.99	18477	999.9	-9.9	-99.9	59	6.7
66.18	71.70	18551	-66.8	-9.9	-99.9	62	7.2
66.54	70.00	18697	-66.1	-9.9	-99.9	68	8.7
67.00	9999.99	18726	999.9	-9.9	-99.9	69	8.7
67.42	67.40	18928	-62.9	-9.9	-99.9	78	9.8
6[illegible]0	9999.99	19011	999.9	-9.9	-99.9	82	10.3
6[illegible]00	9999.99	19287	999.9	-9.9	-99.9	89	10.3
69.42	61.60	19481	-63.4	-9.9	-99.9	93	9.8
70.00	9999.99	19566	999.9	-9.9	-99.9	95	9.8
71.00	9999.99	19850	999.9	-9.9	-99.9	97	7.2
72.00	9999.99	20133	999.9	-9.9	-99.9	96	6.2

TALLAHASSEE, FLORIDA 9-24-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
73.00	9999.99	20416	999.9	-9.9	-99.9	93	5.7
74.00	9999.99	20700	999.9	-9.9	-99.9	103	4.6
74.18	50.00	20785	-56.4	-9.9	-99.9	107	4.6
75.00	9999.99	21006	999.9	-9.9	-99.9	119	4.1
75.48	46.40	21258	-57.4	-9.9	-99.9	120	2.6
76.00	9999.99	21322	999.9	-9.9	-99.9	120	2.1
77.00	9999.99	21644	999.9	-9.9	-99.9	83	1.5
78.00	9999.99	21966	999.9	-9.9	-99.9	55	3.6
79.00	9999.99	22287	999.9	-9.9	-99.9	56	6.2
80.00	9999.99	22609	999.9	-9.9	-99.9	69	8.2
80.48	36.00	22866	-56.4	-9.9	-99.9	81	8.2
81.00	9999.99	22934	999.9	-9.9	-99.9	84	8.2
82.00	9999.99	23273	999.9	-9.9	-99.9	95	8.7
82.06	33.60	23307	-53.1	-9.9	-99.9	97	8.7
83.00	9999.99	23606	999.9	-9.9	-99.9	110	7.7
84.00	9999.99	23937	999.9	-9.9	-99.9	115	7.7
84.18	30.00	24037	-53.6	-9.9	-99.9	115	8.2
85.00	9999.99	24289	999.9	-9.9	-99.9	116	8.7
85.36	27.90	24505	-52.5	-9.9	-99.9	120	8.2
86.00	9999.99	24644	999.9	-9.9	-99.9	122	7.7
86.42	26.30	24886	-53.4	-9.9	-99.9	116	7.2
87.00	9999.99	24956	999.9	-9.9	-99.9	113	6.7
88.00	9999.99	25361	999.9	-9.9	-99.9	105	5.1
[illegible].24	23.90	25507	-49.7	-9.9	-99.9	97	5.1
89.00	9999.99	25748	999.9	-9.9	-99.9	83	5.1
89.36	22.20	25989	-50.0	-9.9	-99.9	80	5.7
90.00	9999.99	26185	999.9	-9.9	-99.9	77	5.7
91.00	20.00	26675	-47.6	-9.9	-99.9	81	7.2
92.00	9999.99	27072	999.9	-9.9	-99.9	87	8.2
93.00	9999.99	27469	999.9	-9.9	-99.9	94	7.2
93.54	16.80	27826	-48.3	-9.9	-99.9	93	6.7
94.00	9999.99	27863	999.9	-9.9	-99.9	93	6.7
95.00	9999.99	28238	999.9	-9.9	-99.9	91	5.7
95.06	15.70	28275	-45.3	-9.9	-99.9	90	5.7
96.00	9999.99	28640	999.9	-9.9	-99.9	80	5.1
97.00	9999.99	29046	999.9	-9.9	-99.9	65	6.2
98.00	9999.99	29452	999.9	-9.9	-99.9	54	6.2
98.36	12.70	29696	-43.7	-9.9	-99.9	49	6.2
99.00	9999.99	29882	999.9	-9.9	-99.9	46	6.2
100.00	9999.99	30346	999.9	-9.9	-99.9	86	10.3
101.00	9999.99	30811	999.9	-9.9	-99.9	97	11.3
102.00	9999.99	31276	999.9	-9.9	-99.9	103	15.9
102.06	10.00	31322	-38.4	30.0	6.6	999	999.9
102.42	9.60	31603	-38.0	30.0	6.6	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-25-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL TIME (M./SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1013.40	18	20.4	2.8	84.0	30	4.1
.30	1000.00	133	19.4	1.5	91.3	42	6.7
1.00	9999.99	282	999.9	-9.9	-99.9	58	9.8
1.36	962.70	460	16.7	.6	96.1	73	10.3
2.00	9999.99	576	999.9	-9.9	-99.9	82	10.6
2.30	933.90	720	17.2	.7	95.7	90	9.8
2.48	925.00	802	18.7	.7	95.9	95	9.8
3.00	9999.99	861	999.9	-9.9	-99.9	98	9.3
3.42	896.90	1068	19.7	3.8	78.3	99	6.2
4.00	9999.99	1152	999.9	-9.9	-99.9	100	4.6
4.42	868.30	1348	18.0	2.0	88.4	99	4.1
5.00	9999.99	1426	999.9	-9.9	-99.9	98	4.1
5.24	850.00	1531	17.2	3.8	77.9	102	4.6
6.00	9999.99	1699	999.9	-9.9	-99.9	108	5.1
7.00	9999.99	1979	999.9	-9.9	-99.9	126	4.6
7.12	801.10	2035	14.0	3.7	78.0	128	4.6
7.30	793.20	2119	13.6	2.5	84.9	131	4.6
7.54	782.40	2234	12.8	4.2	75.3	136	4.1
8.00	779.70	2263	12.6	2.7	83.8	137	4.1
8.30	765.80	2415	11.6	1.3	91.8	144	3.6
9.00	9999.99	2559	999.9	-9.9	-99.9	151	3.6
10.00	9999.99	2846	999.9	-9.9	-99.9	157	3.6
11.00	9999.99	3133	999.9	-9.9	-99.9	157	3.1
.06	700.00	3162	6.9	1.2	92.3	159	3.1
11.12	697.10	3196	6.8	3.0	81.0	161	2.6
11.30	689.90	3282	6.4	3.2	80.2	166	2.1
11.36	687.50	3310	6.3	5.1	69.4	168	2.1
11.48	682.60	3369	6.2	5.6	67.1	171	2.1
11.54	680.10	3399	6.3	8.1	55.9	173	1.5
12.00	9999.99	3428	999.9	-9.9	-99.9	175	1.5
12.30	665.90	3572	5.8	9.0	52.5	191	1.5
13.00	9999.99	3718	999.9	-9.9	-99.9	207	1.0
14.00	9999.99	4010	999.9	-9.9	-99.9	234	1.5
14.36	617.60	4185	2.1	9.3	50.4	238	1.0
15.00	608.80	4301	1.7	12.9	38.0	241	1.0
15.18	602.00	4391	1.2	10.7	45.0	226	1.0
15.24	599.80	4421	1.0	8.0	55.0	221	1.0
16.00	587.00	4594	.0	7.6	56.7	192	1.0
16.54	568.50	4850	-1.6	6.4	61.4	195	1.0
17.00	9999.99	4880	999.9	-9.9	-99.9	195	1.0
17.06	564.20	4910	-2.0	4.7	69.8	197	1.0
17.42	551.60	5090	-3.2	5.9	63.7	211	1.0
18.00	9999.99	5178	999.9	-9.9	-99.9	218	1.0
18.12	541.50	5236	-3.1	12.2	38.9	225	1.0
18.18	539.40	5267	-3.0	18.7	22.2	228	1.0
18.24	537.40	5296	-3.0	30.0	20.0	231	1.0
18.42	531.20	5388	-2.9	30.0	20.0	242	1.5
19.00	9999.99	5484	999.9	-9.9	-99.9	253	1.5
[illegible] 00	9999.99	5802	999.9	-9.9	-99.9	255	2.6
2[illegible].12	500.00	5866	-5.2	30.0	20.0	256	2.6
20.54	486.30	6083	-6.9	30.0	20.0	259	2.1
21.00	9999.99	6113	999.9	-9.9	-99.9	259	2.1
21.24	476.90	6235	-7.4	18.0	22.3	262	2.1
21.30	474.90	6268	-7.5	14.6	30.4	263	2.1

TALLAHASSEE, FLORIDA 9-25-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL TIME (M./SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
21.48	469.10	6364	-8.2	11.6	39.1	266	2.6
22.00	9999.99	6430	999.9	-9.9	-99.9	268	2.6
22.42	451.40	6661	-10.4	18.2	20.8	242	3.1
23.00	9999.99	6754	999.9	-9.9	-99.9	231	3.6
23.12	442.40	6816	-11.7	14.8	28.4	230	3.6
23.30	436.70	6915	-12.3	14.4	29.2	228	4.1
23.42	432.80	6984	-12.2	30.0	20.0	227	4.1
24.00	427.60	7076	-12.4	30.0	20.0	225	4.6
25.00	9999.99	7392	999.9	-9.9	-99.9	241	4.6
25.36	400.00	7582	-16.3	30.0	20.0	240	4.1
26.00	9999.99	7707	999.9	-9.9	-99.9	240	4.1
27.00	9999.99	8018	999.9	-9.9	-99.9	242	4.1
28.00	9999.99	8330	999.9	-9.9	-99.9	237	4.1
28.12	358.70	8392	-23.0	30.0	20.0	236	4.1
29.00	9999.99	8638	999.9	-9.9	-99.9	232	5.1
29.12	343.90	8699	-25.8	11.1	34.6	232	5.7
29.54	334.00	8909	-27.7	11.6	32.2	234	7.2
30.00	9999.99	8936	999.9	-9.9	-99.9	234	7.2
30.30	326.50	9073	-27.9	15.8	20.2	231	8.2
31.00	9999.99	9219	999.9	-9.9	-99.9	228	9.3
31.18	316.00	9307	-29.8	30.0	20.0	229	9.8
31.48	309.40	9457	-31.2	6.4	52.8	230	10.8
32.00	9999.99	9514	999.9	-9.9	-99.9	231	11.3
[illegible].12	304.50	9570	-32.3	6.8	50.5	233	11.3
32.36	300.00	9675	-33.0	10.2	35.1	236	11.8
33.00	9999.99	9784	999.9	-9.9	-99.9	240	11.8
34.00	9999.99	10056	999.9	-9.9	-99.9	248	11.8
34.18	280.70	10138	-37.3	10.0	34.2	250	11.8
35.00	9999.99	10331	999.9	-9.9	-99.9	256	11.3
35.48	264.30	10552	-39.7	12.2	25.6	262	10.8
35.54	263.20	10580	-39.9	12.2	25.3	263	10.8
36.00	9999.99	10609	999.9	-9.9	-99.9	264	10.8
37.00	9999.99	10901	999.9	-9.9	-99.9	269	13.9
37.06	250.00	10930	-43.2	-9.9	-99.9	269	13.9
38.00	9999.99	11178	999.9	-9.9	-99.9	272	15.9
39.00	9999.99	11454	999.9	-9.9	-99.9	276	14.9
40.00	9999.99	11729	999.9	-9.9	-99.9	280	13.9
41.00	9999.99	12005	999.9	-9.9	-99.9	277	12.9
42.00	9999.99	12281	999.9	-9.9	-99.9	270	11.3
42.24	200.00	12391	-56.0	-9.9	-99.9	267	11.3
43.00	9999.99	12551	999.9	-9.9	-99.9	262	11.8
44.00	9999.99	12818	999.9	-9.9	-99.9	244	12.9
44.42	181.40	13005	-60.5	-9.9	-99.9	236	13.4
45.00	9999.99	13094	999.9	-9.9	-99.9	232	13.4
46.00	9999.99	13392	999.9	-9.9	-99.9	241	10.8
47.00	162.30	13689	-66.0	-9.9	-99.9	263	9.3
47.48	157.00	13890	-67.1	-9.9	-99.9	270	9.8
48.00	9999.99	13940	999.9	-9.9	-99.9	272	9.8
48.54	150.00	14165	-67.3	-9.9	-99.9	282	10.3
4[illegible].00	9999.99	14192	999.9	-9.9	-99.9	283	10.3
50.00	142.80	14461	-68.9	-9.9	-99.9	289	9.8
51.00	9999.99	14734	999.9	-9.9	-99.9	296	8.7
51.06	135.80	14761	-69.6	-9.9	-99.9	296	8.7
51.54	130.70	14988	-71.5	-9.9	-99.9	291	6.2

TALLAHASSEE, FLORIDA 9-25-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL[illegible] TIME (M[illegible]/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
52.00	9999.99	15016	999.9	-9.9	-99.9	291	6.2
52.36	126.40	15186	-71.0	-9.9	-99.9	283	5.1
53.00	9999.99	15303	999.9	-9.9	-99.9	278	4.1
53.18	122.10	15390	-71.6	-9.9	-99.9	279	3.6
54.00	9999.99	15592	999.9	-9.9	-99.9	282	2.1
54.30	115.10	15737	-74.0	-9.9	-99.9	288	1.5
55.00	9999.99	15875	999.9	-9.9	-99.9	293	1.0
56.00	9999.99	16151	999.9	-9.9	-99.9	43	2.1
57.00	9999.99	16427	999.9	-9.9	-99.9	55	5.1
57.30	100.00	16565	-70.5	-9.9	-99.9	63	5.7
58.00	9999.99	16721	999.9	-9.9	-99.9	71	6.7
58.24	95.40	16845	-69.5	-9.9	-99.9	75	7.7
59.00	9999.99	17026	999.9	-9.9	-99.9	82	8.7
60.00	9999.99	17328	999.9	-9.9	-99.9	86	8.7
60.24	86.20	17449	-70.0	-9.9	-99.9	91	8.7
61.00	9999.99	17624	999.9	-9.9	-99.9	98	8.7
61.06	83.30	17653	-68.9	-9.9	-99.9	99	8.7
61.36	81.40	17792	-66.2	-9.9	-99.9	104	7.7
61.54	80.30	17875	-65.5	-9.9	-99.9	107	7.2
62.00	9999.99	17903	999.9	-9.9	-99.9	108	7.2
62.30	78.10	18044	-65.5	-9.9	-99.9	108	5.7
63.00	76.20	18194	-63.9	-9.9	-99.9	108	4.1
63.48	73.20	18440	-63.4	-9.9	-99.9	110	2.6
[illegible].00	9999.99	18501	999.9	-9.9	-99.9	110	2.1
64.42	70.00	18715	-63.8	-9.9	-99.9	32	1.5
65.00	9999.99	18807	999.9	-9.9	-99.9	359	1.5
66.00	9999.99	19112	999.9	-9.9	-99.9	11	3.6
67.00	9999.99	19418	999.9	-9.9	-99.9	32	3.6
68.00	9999.99	19724	999.9	-9.9	-99.9	51	5.1
68.54	56.80	19999	-62.9	-9.9	-99.9	77	5.7
69.00	9999.99	20029	999.9	-9.9	-99.9	80	5.7
70.00	9999.99	20334	999.9	-9.9	-99.9	87	5.7
71.00	9999.99	20638	999.9	-9.9	-99.9	83	6.7
71.30	50.00	20790	-59.9	-9.9	-99.9	86	7.2
72.00	9999.99	20948	999.9	-9.9	-99.9	89	7.7
72.54	46.60	21233	-57.0	-9.9	-99.9	92	8.7
73.00	9999.99	21264	999.9	-9.9	-99.9	92	8.7
74.00	9999.99	21578	999.9	-9.9	-99.9	102	8.7
74.48	42.40	21829	-58.5	-9.9	-99.9	116	8.7
75.00	9999.99	21895	999.9	-9.9	-99.9	120	8.7
76.00	9999.99	22227	999.9	-9.9	-99.9	137	7.2
76.12	39.40	22293	-55.6	-9.9	-99.9	138	6.7
77.00	9999.99	22560	999.9	-9.9	-99.9	144	4.6
78.00	9999.99	22893	999.9	-9.9	-99.9	121	3.1
79.00	9999.99	23227	999.9	-9.9	-99.9	77	3.1
79.42	32.80	23460	-56.0	-9.9	-99.9	68	4.6
80.00	9999.99	23555	999.9	-9.9	-99.9	65	5.1
81.00	9999.99	23872	999.9	-9.9	-99.9	70	6.2
8[illegible].30	30.00	24031	-53.5	-9.9	-99.9	73	6.7
8[illegible].00	9999.99	24189	999.9	-9.9	-99.9	75	6.7
82.42	28.30	24409	-50.8	-9.9	-99.9	80	7.2
83.00	9999.99	24506	999.9	-9.9	-99.9	82	7.2
84.00	9999.99	24829	999.9	-9.9	-99.9	89	7.7
85.00	9999.99	25151	999.9	-9.9	-99.9	94	7.7

TALLAHASSEE, FLORIDA 9-25-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL(TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
86.00	9999.99	25474	999.9	-9.9	-99.9	101	6.7
87.00	9999.99	25797	999.9	-9.9	-99.9	98	6.7
87.42	22.10	26023	-49.9	-9.9	-99.9	97	6.7
88.00	9999.99	26121	999.9	-9.9	-99.9	97	6.7
89.00	9999.99	26449	999.9	-9.9	-99.9	91	7.7
89.42	20.00	26679	-47.7	-9.9	-99.9	90	8.7
90.00	9999.99	26775	999.9	-9.9	-99.9	90	9.3
91.00	9999.99	27094	999.9	-9.9	-99.9	91	10.3
92.00	9999.99	27414	999.9	-9.9	-99.9	93	10.3
93.00	9999.99	27733	999.9	-9.9	-99.9	96	10.8
94.00	9999.99	28052	999.9	-9.9	-99.9	103	10.8
94.36	15.80	28244	-45.6	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-25-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1014.40	18	18.0	3.1	82.0	40	3.1
.24	1000.00	141	17.0	1.9	88.9	999	999.9
1.00	9999.99	313	999.9	-9.9	-99.9	999	999.9
1.48	953.90	543	14.6	.7	95.5	999	999.9
1.54	950.80	570	15.0	.7	95.5	999	999.9
2.00	9999.99	595	999.9	-9.9	-99.9	102	18.0
2.12	942.60	644	18.2	.8	95.4	103	17.5
2.54	925.00	807	18.8	.8	95.2	107	14.9
3.00	9999.99	834	999.9	-9.9	-99.9	108	14.4
4.00	9999.99	1104	999.9	-9.9	-99.9	126	9.8
4.12	888.00	1158	17.7	.8	95.4	128	9.3
5.00	9999.99	1407	999.9	-9.9	-99.9	137	7.7
5.24	850.00	1532	15.7	.7	95.7	135	7.2
6.00	9999.99	1783	999.9	-9.9	-99.9	132	6.7
7.00	9999.99	2200	999.9	-9.9	-99.9	105	5.1
7.06	781.70	2242	12.6	.8	94.9	103	5.1
8.00	9999.99	2561	999.9	-9.9	-99.9	87	6.2
8.06	749.40	2596	9.8	1.0	93.9	90	6.2
8.42	735.80	2749	10.0	1.6	90.2	102	6.2
9.00	9999.99	2829	999.9	-9.9	-99.9	108	6.2
9.12	724.00	2883	9.8	4.3	74.3	112	6.2
10.00	9999.99	3107	999.9	-9.9	-99.9	130	5.7
10.12	700.00	3163	8.7	4.0	75.8	130	5.7
.30	692.60	3251	8.0	4.5	73.2	130	5.7
10.48	685.20	3340	7.7	8.5	54.8	130	5.1
11.00	9999.99	3397	999.9	-9.9	-99.9	130	5.1
11.48	661.90	3625	5.9	9.4	50.9	123	4.6
12.00	9999.99	3683	999.9	-9.9	-99.9	121	4.6
12.18	650.30	3769	5.6	12.8	39.7	119	4.1
12.24	648.10	3797	5.5	11.0	45.2	118	4.1
13.00	9999.99	3974	999.9	-9.9	-99.9	113	3.6
13.12	629.60	4033	4.0	13.1	38.2	114	3.6
13.24	625.50	4087	3.7	16.5	29.1	115	3.1
13.30	623.50	4113	3.5	12.9	38.8	115	3.1
13.36	621.40	4140	3.3	6.4	62.5	115	3.1
14.00	9999.99	4254	999.9	-9.9	-99.9	117	2.6
14.06	610.50	4283	2.3	6.2	63.3	117	2.6
14.18	606.00	4343	1.9	4.6	71.4	116	2.6
14.42	597.10	4463	1.2	6.8	60.5	114	2.1
15.00	9999.99	4550	999.9	-9.9	-99.9	113	2.1
15.18	584.20	4638	.0	4.7	70.4	114	2.1
15.30	580.40	4691	-.3	6.5	61.2	115	1.5
15.48	574.60	4771	-.9	3.8	75.1	115	1.5
16.00	9999.99	4831	999.9	-9.9	-99.9	116	1.5
16.24	561.80	4951	-1.7	6.3	62.0	120	2.1
16.42	555.60	5039	-2.1	2.4	84.0	123	2.1
17.00	549.40	5128	-2.5	4.3	71.9	126	2.6
17.06	547.20	5160	-2.6	8.1	53.9	125	2.6
1[illegible].12	545.10	5191	-2.6	9.5	48.3	125	2.6
1[illegible].42	534.80	5342	-3.1	11.0	42.7	122	3.1
18.00	528.60	5434	-3.5	16.3	27.2	120	3.6
18.24	520.50	5556	-4.4	16.1	27.6	116	3.1
18.36	516.50	5617	-4.7	12.3	37.9	115	3.1
18.54	510.60	5707	-5.1	16.5	26.3	112	2.6

TALLAHASSEE, FLORIDA 9-25-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL[illegible] TIME (M[illegible]/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
19.00	9999.99	5740	999.9	-9.9	-99.9	111	2.6
19.24	500.00	5872	-6.0	17.4	24.0	99	2.6
20.00	9999.99	6043	999.9	-9.9	-99.9	84	2.1
20.30	480.30	6185	-8.3	15.6	27.5	74	2.1
20.54	473.10	6302	-9.0	13.6	32.7	66	2.6
21.00	9999.99	6333	999.9	-9.9	-99.9	64	2.6
21.06	469.40	6363	-9.2	10.2	43.8	64	2.6
22.00	9999.99	6620	999.9	-9.9	-99.9	63	2.6
22.30	445.60	6763	-12.5	11.9	36.8	101	2.1
22.48	440.70	6848	-13.3	8.6	48.6	123	1.5
23.00	9999.99	6908	999.9	-9.9	-99.9	139	1.0
23.18	432.10	6998	-14.1	7.4	53.5	153	1.5
23.30	428.60	7059	-14.1	15.2	26.5	163	2.1
23.42	425.40	7116	-14.2	17.9	20.3	172	2.6
24.00	9999.99	7209	999.9	-9.9	-99.9	187	3.1
25.00	9999.99	7519	999.9	-9.9	-99.9	187	3.6
25.12	400.00	7581	-16.6	30.0	20.0	190	3.6
26.00	9999.99	7830	999.9	-9.9	-99.9	201	3.1
27.00	9999.99	8142	999.9	-9.9	-99.9	229	2.6
27.24	364.80	8267	-21.6	30.0	20.0	242	2.6
27.36	361.40	8336	-22.2	15.6	22.8	248	3.1
27.54	356.40	8438	-23.1	6.9	53.2	259	3.1
28.00	9999.99	8471	999.9	-9.9	-99.9	262	3.1
[illegible].06	353.20	8504	-23.4	6.5	55.2	266	3.1
29.00	9999.99	8797	999.9	-9.9	-99.9	300	4.6
29.30	331.80	8959	-26.1	13.0	28.4	310	5.7
30.00	324.60	9117	-27.4	30.0	20.0	320	6.7
31.00	9999.99	9429	999.9	-9.9	-99.9	324	7.2
31.48	300.00	9679	-32.6	12.7	26.7	319	8.2
32.00	9999.99	9746	999.9	-9.9	-99.9	318	8.2
32.36	288.70	9948	-34.6	30.0	20.0	311	8.7
33.00	9999.99	10073	999.9	-9.9	-99.9	306	9.3
34.00	9999.99	10385	999.9	-9.9	-99.9	297	11.3
34.48	261.40	10635	-39.9	30.0	20.0	295	13.4
35.00	9999.99	10696	999.9	-9.9	-99.9	295	13.9
35.48	250.00	10938	-42.6	-9.9	-99.9	294	14.9
36.00	9999.99	10999	999.9	-9.9	-99.9	294	15.4
37.00	9999.99	11301	999.9	-9.9	-99.9	291	15.9
37.48	228.30	11543	-48.1	-9.9	-99.9	281	15.9
38.00	9999.99	11608	999.9	-9.9	-99.9	279	15.9
39.00	9999.99	11887	999.9	-9.9	-99.9	270	15.4
40.00	9999.99	12173	999.9	-9.9	-99.9	268	15.9
40.48	200.00	12402	-55.1	-9.9	-99.9	269	17.0
41.00	9999.99	12460	999.9	-9.9	-99.9	269	17.0
42.00	9999.99	12752	999.9	-9.9	-99.9	266	17.0
43.00	9999.99	13043	999.9	-9.9	-99.9	263	17.5
43.12	179.00	13101	-61.4	-9.9	-99.9	262	17.5
44.00	9999.99	13330	999.9	-9.9	-99.9	260	18.0
[illegible].00	9999.99	13617	999.9	-9.9	-99.9	258	18.5
[illegible].42	159.20	13818	-67.0	-9.9	-99.9	270	17.0
46.00	9999.99	13909	999.9	-9.9	-99.9	275	15.9
46.24	153.70	14031	-65.5	-9.9	-99.9	281	14.4
46.54	150.00	14179	-66.1	-9.9	-99.9	288	12.9
47.00	9999.99	14208	999.9	-9.9	-99.9	289	12.3

ALLAHASSEE, FLORIDA 9-25-1992 PRELIMINARY

ADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL TIME (M /SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
48.00	9999.99	14496	999.9	-9.9	-99.9	305	11.3
49.00	135.60	14785	-70.2	-9.9	-99.9	315	9.3
49.36	131.30	14977	-69.5	-9.9	-99.9	321	8.2
50.00	9999.99	15097	999.9	-9.9	-99.9	324	7.7
50.24	126.10	15217	-71.1	-9.9	-99.9	334	6.7
51.00	9999.99	15400	999.9	-9.9	-99.9	349	4.6
51.12	121.00	15461	-71.2	-9.9	-99.9	359	4.6
52.00	9999.99	15706	999.9	-9.9	-99.9	37	3.6
52.06	115.50	15737	-70.3	-9.9	-99.9	41	3.6
52.54	110.60	15994	-71.7	-9.9	-99.9	73	4.6
53.00	9999.99	16025	999.9	-9.9	-99.9	77	4.6
53.18	108.30	16118	-71.9	-9.9	-99.9	85	5.1
54.00	9999.99	16326	999.9	-9.9	-99.9	104	6.2
54.12	103.50	16386	-70.8	-9.9	-99.9	103	6.2
54.54	100.00	16589	-71.8	-9.9	-99.9	101	5.1
55.00	9999.99	16616	999.9	-9.9	-99.9	101	5.1
55.48	95.90	16836	-71.2	-9.9	-99.9	100	5.7
56.00	9999.99	16893	999.9	-9.9	-99.9	100	5.7
56.48	91.40	17122	-68.9	-9.9	-99.9	95	4.6
57.00	9999.99	17182	999.9	-9.9	-99.9	94	4.1
57.24	88.70	17302	-69.3	-9.9	-99.9	82	4.1
58.00	9999.99	17493	999.9	-9.9	-99.9	63	3.6
58.12	85.00	17556	-68.5	-9.9	-99.9	62	4.1
[illegible].54	82.10	17764	-69.0	-9.9	-99.9	59	5.1
59.00	9999.99	17792	999.9	-9.9	-99.9	59	5.1
59.18	80.60	17875	-67.9	-9.9	-99.9	59	5.7
59.54	78.30	18049	-67.8	-9.9	-99.9	58	6.7
60.00	9999.99	18080	999.9	-9.9	-99.9	58	6.7
60.24	76.30	18205	-66.3	-9.9	-99.9	64	7.2
61.00	73.90	18399	-66.8	-9.9	-99.9	73	8.2
62.00	9999.99	18697	999.9	-9.9	-99.9	80	9.3
62.06	70.00	18727	-65.7	-9.9	-99.9	81	9.3
63.00	9999.99	19010	999.9	-9.9	-99.9	87	8.7
64.00	9999.99	19324	999.9	-9.9	-99.9	92	8.2
64.24	62.20	19450	-62.8	-9.9	-99.9	92	7.7
65.00	9999.99	19640	999.9	-9.9	-99.9	92	7.2
65.24	59.10	19767	-60.0	-9.9	-99.9	90	6.7
66.00	9999.99	19958	999.9	-9.9	-99.9	87	5.7
67.00	9999.99	20276	999.9	-9.9	-99.9	88	5.7
68.00	9999.99	20594	999.9	-9.9	-99.9	95	3.6
68.42	50.00	20817	-57.4	-9.9	-99.9	90	3.1
69.00	9999.99	20921	999.9	-9.9	-99.9	87	3.1
70.00	9999.99	21267	999.9	-9.9	-99.9	77	2.6
70.18	45.80	21371	-57.8	-9.9	-99.9	71	3.1
71.00	9999.99	21607	999.9	-9.9	-99.9	57	4.1
71.24	43.20	21742	-55.6	-9.9	-99.9	58	5.1
72.00	9999.99	21958	999.9	-9.9	-99.9	59	6.2
73.00	9999.99	22319	999.9	-9.9	-99.9	66	7.7
7[illegible].48	37.70	22607	-57.1	-9.9	-99.9	80	8.2
7[illegible].00	9999.99	22678	999.9	-9.9	-99.9	83	8.2
75.00	9999.99	23034	999.9	-9.9	-99.9	99	8.7
75.48	33.70	23319	-55.8	-9.9	-99.9	109	8.2
76.00	9999.99	23394	999.9	-9.9	-99.9	111	8.2
77.00	31.40	23769	-55.2	-9.9	-99.9	122	8.2

TALLAHASSEE, FLORIDA 9-25-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELAP TIME (M /SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
77.48	30.00	24061	-54.8	-9.9	-99.9	101	7.7
78.00	9999.99	24136	999.9	-9.9	-99.9	96	7.7
79.00	9999.99	24509	999.9	-9.9	-99.9	90	7.2
80.00	9999.99	24882	999.9	-9.9	-99.9	81	7.2
80.12	26.10	24957	-52.3	-9.9	-99.9	78	7.2
81.00	9999.99	25272	999.9	-9.9	-99.9	68	7.7
81.48	23.70	25586	-48.5	-9.9	-99.9	83	6.7
82.00	9999.99	25666	999.9	-9.9	-99.9	87	6.7
83.00	9999.99	26064	999.9	-9.9	-99.9	91	7.2
84.00	9999.99	26462	999.9	-9.9	-99.9	96	7.7
84.36	20.00	26701	-49.4	-9.9	-99.9	100	7.2
85.00	9999.99	26871	999.9	-9.9	-99.9	103	6.7
86.00	9999.99	27296	999.9	-9.9	-99.9	95	5.7
87.00	9999.99	27721	999.9	-9.9	-99.9	75	5.7
88.00	9999.99	28147	999.9	-9.9	-99.9	71	7.2
89.00	9999.99	28572	999.9	-9.9	-99.9	78	8.2
90.00	9999.99	28997	999.9	-9.9	-99.9	85	10.8
90.48	13.40	29337	-47.7	-9.9	-99.9	89	10.8
91.00	9999.99	29424	999.9	-9.9	-99.9	90	10.8
92.00	9999.99	29860	999.9	-9.9	-99.9	84	10.3
93.00	9999.99	30295	999.9	-9.9	-99.9	79	12.3
94.00	9999.99	30731	999.9	-9.9	-99.9	76	12.3
95.00	9999.99	31166	999.9	-9.9	-99.9	83	12.9
[illegible].18	10.00	31297	-41.7	-9.9	-99.9	85	12.9
[illegible].00	9999.99	31585	999.9	-9.9	-99.9	89	13.4
96.30	9.30	31790	-41.6	-9.9	-99.9	91	13.4
96.54	9.00	32013	-39.7	-9.9	-99.9	93	12.9
97.00	9999.99	32066	999.9	-9.9	-99.9	93	12.9
97.48	8.40	32486	-39.1	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-26-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1013.70	18	23.0	4.0	78.0	40	3.6
.30	1000.00	137	21.4	2.5	85.6	52	6.2
1.00	9999.99	258	999.9	-9.9	-99.9	65	8.7
1.54	961.40	477	18.4	.9	94.6	85	10.3
2.00	9999.99	504	999.9	-9.9	-99.9	88	10.3
2.36	940.80	664	18.0	.9	94.4	99	10.8
2.54	932.00	745	19.1	.9	94.4	104	11.3
3.00	9999.99	778	999.9	-9.9	-99.9	106	11.3
3.06	925.00	810	19.0	.9	94.6	107	10.8
4.00	9999.99	1043	999.9	-9.9	-99.9	117	8.7
4.36	884.20	1198	18.0	4.1	76.9	124	7.2
5.00	9999.99	1303	999.9	-9.9	-99.9	128	6.2
5.18	865.40	1382	17.2	4.9	72.8	127	6.2
5.54	850.00	1536	16.2	2.4	85.7	125	6.2
6.00	9999.99	1565	999.9	-9.9	-99.9	125	6.2
6.18	838.40	1653	15.7	3.8	77.7	123	6.2
7.00	9999.99	1842	999.9	-9.9	-99.9	119	6.7
8.00	9999.99	2113	999.9	-9.9	-99.9	124	7.7
8.18	786.50	2194	12.6	1.7	89.7	126	8.2
9.00	9999.99	2395	999.9	-9.9	-99.9	132	8.7
9.06	765.30	2424	11.9	3.7	78.1	132	8.7
9.18	760.60	2475	11.7	2.9	82.1	132	8.7
9.30	756.00	2526	11.5	5.1	70.6	132	8.7
9.42	751.20	2580	11.3	3.9	76.5	133	8.7
10.00	9999.99	2661	999.9	-9.9	-99.9	133	8.7
10.06	741.50	2688	11.0	6.9	62.3	133	8.7
10.48	724.60	2881	10.0	6.1	65.7	133	8.7
11.00	9999.99	2931	999.9	-9.9	-99.9	133	8.7
11.06	718.10	2956	9.8	10.9	46.9	133	8.7
11.18	713.30	3011	9.6	6.2	64.8	134	8.7
11.36	706.00	3097	9.1	9.4	51.8	136	8.7
11.54	700.00	3168	8.8	9.0	53.1	137	8.7
12.00	9999.99	3198	999.9	-9.9	-99.9	138	8.7
12.24	687.40	3318	7.8	7.1	60.4	136	8.7
13.00	9999.99	3490	999.9	-9.9	-99.9	133	8.2
13.12	668.60	3547	7.2	8.3	55.5	132	8.2
14.00	9999.99	3777	999.9	-9.9	-99.9	126	7.2
14.24	641.00	3892	4.0	4.8	70.6	128	7.2
14.42	634.10	3980	3.8	7.7	56.9	130	7.2
14.48	631.80	4010	3.7	5.5	67.3	130	7.2
15.00	9999.99	4065	999.9	-9.9	-99.9	131	7.2
15.36	614.80	4231	1.8	3.3	78.5	132	7.2
15.54	608.00	4321	1.4	5.2	68.0	132	7.2
16.00	9999.99	4352	999.9	-9.9	-99.9	132	7.2
16.06	603.30	4383	.9	3.3	78.4	133	7.2
16.36	592.00	4535	.0	5.9	64.2	135	7.2
17.00	9999.99	4652	999.9	-9.9	-99.9	137	7.2
17.06	581.30	4681	-.7	6.4	61.9	138	7.2
17.18	577.10	4739	-.9	13.4	35.8	140	7.2
17.30	572.90	4797	-1.2	5.8	64.3	142	7.2
17.36	570.80	4827	-1.4	5.6	65.6	144	7.7
17.48	566.60	4886	-1.3	30.0	20.0	146	7.7
17.54	564.50	4915	-1.3	30.0	20.0	147	7.7
18.00	9999.99	4944	999.9	-9.9	-99.9	148	7.7

TALLAHASSEE, FLORIDA 9-26-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
18.18	556.50	5029	-2.2	30.0	20.0	150	7.7
18.24	554.50	5057	-2.4	17.4	25.2	151	7.7
18.30	552.60	5085	-2.6	9.2	49.4	151	7.7
18.36	550.60	5113	-2.8	9.8	46.9	152	8.2
18.42	548.50	5144	-2.9	30.0	20.0	153	8.2
18.48	546.40	5174	-3.1	30.0	20.0	154	8.2
18.54	544.30	5205	-3.3	8.7	51.2	154	8.2
19.00	542.30	5234	-3.5	3.5	76.7	155	8.2
19.06	540.30	5263	-3.7	1.7	88.0	155	8.2
19.24	534.30	5351	-4.3	1.1	92.0	155	8.2
19.54	524.10	5503	-4.8	1.8	87.1	154	8.7
20.00	9999.99	5534	999.9	-9.9	-99.9	154	8.7
20.12	517.90	5597	-5.1	4.8	69.0	154	8.7
21.00	9999.99	5842	999.9	-9.9	-99.9	154	8.2
21.06	500.00	5873	-6.8	4.5	70.3	153	8.2
21.48	487.10	6077	-8.2	3.1	78.2	148	8.2
22.00	9999.99	6135	999.9	-9.9	-99.9	147	8.2
22.30	474.50	6260	-9.6	4.0	72.6	142	8.2
22.42	470.70	6342	-9.5	9.6	45.6	140	8.7
23.00	464.70	6441	-10.0	14.0	31.2	136	8.7
23.24	457.10	6568	-11.0	5.2	65.1	136	8.2
23.48	450.00	6688	-11.9	3.3	76.1	135	7.7
24.00	9999.99	6749	999.9	-9.9	-99.9	135	7.7
24.42	434.20	6962	-13.0	4.9	66.4	143	5.7
25.00	9999.99	7052	999.9	-9.9	-99.9	147	4.6
25.18	424.00	7143	-13.1	10.3	42.2	155	4.1
25.48	415.70	7293	-14.4	11.9	36.1	168	3.6
26.00	9999.99	7356	999.9	-9.9	-99.9	174	3.1
26.24	405.50	7481	-16.0	8.3	49.0	178	3.1
26.42	400.00	7584	-16.5	10.0	42.1	181	3.1
27.00	9999.99	7664	999.9	-9.9	-99.9	184	3.1
27.36	387.40	7824	-18.7	6.3	57.6	178	3.6
27.54	382.80	7913	-19.3	13.4	29.6	175	3.6
28.00	9999.99	7944	999.9	-9.9	-99.9	174	3.6
28.06	379.60	7975	-19.8	13.2	30.0	172	3.6
28.24	375.30	8059	-20.4	30.0	20.0	166	4.1
28.42	371.00	8145	-21.1	30.0	20.0	161	4.1
28.54	368.30	8199	-21.5	13.7	28.1	157	4.6
29.00	366.90	8227	-21.6	30.0	20.0	155	4.6
30.00	9999.99	8498	999.9	-9.9	-99.9	154	5.1
30.36	345.80	8661	-24.2	30.0	20.0	156	6.2
31.00	9999.99	8784	999.9	-9.9	-99.9	158	6.7
32.00	9999.99	9092	999.9	-9.9	-99.9	158	7.7
32.18	321.70	9184	-28.2	30.0	20.0	158	7.7
33.00	9999.99	9388	999.9	-9.9	-99.9	157	7.7
34.00	300.00	9680	-33.0	11.6	30.0	152	5.7
34.48	289.60	9927	-34.9	6.7	50.3	217	2.6
35.00	9999.99	9986	999.9	-9.9	-99.9	233	1.5
35.36	279.90	10164	-36.1	6.1	52.8	260	4.6
36.00	9999.99	10281	999.9	-9.9	-99.9	277	6.7
37.00	9999.99	10574	999.9	-9.9	-99.9	271	9.3
37.12	261.50	10633	-40.0	6.6	48.5	270	9.3
38.00	9999.99	10855	999.9	-9.9	-99.9	265	10.3
38.18	250.00	10938	-42.6	-9.9	-99.9	264	10.3

TALLAHASSEE, FLORIDA 9-26-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

E P TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
39.00	9999.99	11147	999.9	-9.9	-99.9	263	10.8
40.00	9999.99	11446	999.9	-9.9	-99.9	261	11.8
41.00	9999.99	11744	999.9	-9.9	-99.9	259	12.3
42.00	9999.99	12043	999.9	-9.9	-99.9	257	13.9
43.00	9999.99	12341	999.9	-9.9	-99.9	259	13.4
43.12	200.00	12401	-56.0	-9.9	-99.9	261	13.4
44.00	9999.99	12599	999.9	-9.9	-99.9	266	14.4
44.18	191.60	12673	-58.0	-9.9	-99.9	267	14.9
45.00	9999.99	12870	999.9	-9.9	-99.9	268	15.9
46.00	9999.99	13151	999.9	-9.9	-99.9	267	17.0
47.00	9999.99	13432	999.9	-9.9	-99.9	267	17.0
47.18	167.20	13516	-65.5	-9.9	-99.9	271	16.5
47.48	163.30	13659	-66.5	-9.9	-99.9	277	15.9
48.00	9999.99	13752	999.9	-9.9	-99.9	281	15.4
48.06	159.60	13798	-66.2	-9.9	-99.9	281	14.9
49.00	9999.99	14135	999.9	-9.9	-99.9	284	10.8
49.06	150.00	14172	-68.3	-9.9	-99.9	287	10.3
50.00	9999.99	14438	999.9	-9.9	-99.9	309	8.2
50.06	142.80	14467	-69.7	-9.9	-99.9	311	7.7
50.48	138.00	14671	-69.0	-9.9	-99.9	322	5.7
51.00	9999.99	14733	999.9	-9.9	-99.9	325	5.1
51.30	133.10	14887	-69.5	-9.9	-99.9	335	5.1
52.00	9999.99	15050	999.9	-9.9	-99.9	345	4.6
53.00	9999.99	15376	999.9	-9.9	-99.9	2	4.6
53.36	118.50	15571	-74.4	-9.9	-99.9	11	3.1
54.00	9999.99	15687	999.9	-9.9	-99.9	17	2.6
54.06	115.60	15716	-74.1	-9.9	-99.9	20	2.6
54.54	110.80	15964	-72.4	-9.9	-99.9	41	3.1
55.00	9999.99	15994	999.9	-9.9	-99.9	44	3.1
55.30	107.50	16142	-72.6	-9.9	-99.9	58	4.1
56.00	9999.99	16291	999.9	-9.9	-99.9	73	5.1
56.30	102.20	16440	-71.4	-9.9	-99.9	81	6.7
56.54	100.00	16568	-71.8	-9.9	-99.9	87	8.2
57.00	9999.99	16602	999.9	-9.9	-99.9	89	8.7
57.36	96.10	16804	-69.8	-9.9	-99.9	91	10.3
58.00	9999.99	16922	999.9	-9.9	-99.9	92	11.3
58.30	91.90	17069	-71.0	-9.9	-99.9	93	11.8
59.00	9999.99	17219	999.9	-9.9	-99.9	95	12.9
59.24	87.80	17339	-71.1	-9.9	-99.9	97	12.3
60.00	85.30	17511	-69.9	-9.9	-99.9	100	11.8
60.48	82.00	17746	-69.6	-9.9	-99.9	106	9.8
61.00	9999.99	17807	999.9	-9.9	-99.9	108	9.3
62.00	77.20	18109	-65.7	-9.9	-99.9	117	6.7
63.00	9999.99	18393	999.9	-9.9	-99.9	121	5.1
64.00	9999.99	18678	999.9	-9.9	-99.9	123	4.6
64.06	70.00	18706	-64.4	-9.9	-99.9	122	4.6
65.00	9999.99	19005	999.9	-9.9	-99.9	109	3.1
66.00	9999.99	19338	999.9	-9.9	-99.9	85	2.6
66.24	61.80	19471	-62.3	-9.9	-99.9	78	2.6
67.00	9999.99	19666	999.9	-9.9	-99.9	67	2.6
68.00	9999.99	19990	999.9	-9.9	-99.9	42	3.6
69.00	53.90	20315	-63.1	-9.9	-99.9	55	5.1
70.00	9999.99	20625	999.9	-9.9	-99.9	65	6.2
70.30	50.00	20780	-60.0	-9.9	-99.9	69	6.2

TALLAHASSEE, FLORIDA 9-26-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

B. .P TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
71.00	9999.99	20946	999.9	-9.9	-99.9	74	6.2
72.00	9999.99	21277	999.9	-9.9	-99.9	84	5.7
72.24	45.20	21409	-60.9	-9.9	-99.9	82	5.1
73.00	9999.99	21601	999.9	-9.9	-99.9	80	4.6
74.00	9999.99	21920	999.9	-9.9	-99.9	75	4.1
74.54	39.80	22208	-56.7	-9.9	-99.9	68	4.1
75.00	9999.99	22243	999.9	-9.9	-99.9	67	4.1
76.00	9999.99	22591	999.9	-9.9	-99.9	68	5.1
77.00	9999.99	22939	999.9	-9.9	-99.9	72	6.2
77.30	34.50	23113	-57.3	-9.9	-99.9	70	6.2
78.00	9999.99	23293	999.9	-9.9	-99.9	67	6.2
79.00	9999.99	23654	999.9	-9.9	-99.9	64	6.7
79.06	31.50	23690	-56.0	-9.9	-99.9	64	6.7
80.00	30.00	24002	-53.5	-9.9	-99.9	62	7.7
81.00	9999.99	24365	999.9	-9.9	-99.9	63	8.7
82.00	26.80	24727	-53.6	-9.9	-99.9	74	9.3
83.00	9999.99	25066	999.9	-9.9	-99.9	77	9.3
83.24	24.90	25201	-52.6	-9.9	-99.9	77	9.3
84.00	9999.99	25398	999.9	-9.9	-99.9	77	9.8
84.48	23.20	25661	-49.6	-9.9	-99.9	76	10.3
85.00	9999.99	25728	999.9	-9.9	-99.9	76	10.3
86.00	9999.99	26065	999.9	-9.9	-99.9	77	11.3
87.00	9999.99	26401	999.9	-9.9	-99.9	85	12.9
87.42	20.00	26637	-47.9	-9.9	-99.9	93	12.3
88.00	9999.99	26755	999.9	-9.9	[illegible].9	97	11.8
89.00	9999.99	27147	999.9	-9.9	-99.9	109	10.8
89.12	18.30	27226	-45.7	-9.9	-99.9	110	10.3
90.00	9999.99	27536	999.9	-9.9	-99.9	115	7.7
91.00	9999.99	27924	999.9	-9.9	-99.9	118	5.7
92.00	9999.99	28312	999.9	-9.9	-99.9	109	4.1
92.36	15.00	28545	-47.9	-9.9	-99.9	97	3.6
93.00	9999.99	28699	999.9	-9.9	-99.9	89	3.1
93.18	14.40	28815	-46.8	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-26-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

E P TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1013.90	18	19.2	1.2	93.0	100	2.6
.24	1000.00	137	18.1	.8	95.1	999	999.9
.48	987.60	249	17.6	.8	94.9	999	999.9
1.00	9999.99	301	999.9	-9.9	-99.9	999	999.9
1.24	968.00	416	18.1	.9	94.7	999	999.9
1.48	955.10	532	20.7	.9	94.6	999	999.9
2.00	9999.99	583	999.9	-9.9	-99.9	131	13.9
2.54	925.00	810	19.4	.8	95.1	134	12.3
3.00	9999.99	843	999.9	-9.9	-99.9	135	12.3
3.06	918.00	875	18.9	.9	94.5	136	12.3
3.42	900.90	1037	17.9	5.2	71.1	139	11.3
4.00	9999.99	1115	999.9	-9.9	-99.9	141	10.8
4.18	884.70	1193	17.5	2.8	83.8	141	10.8
5.00	9999.99	1386	999.9	-9.9	-99.9	141	10.3
5.18	856.60	1468	15.9	5.0	71.7	139	10.3
5.30	850.00	1534	15.9	3.6	78.8	138	9.8
5.48	843.30	1602	15.6	3.4	80.3	136	9.8
6.00	9999.99	1654	999.9	-9.9	-99.9	135	9.8
6.06	835.60	1680	15.0	6.5	64.9	134	9.8
7.00	812.90	1913	14.0	2.8	83.4	126	9.8
7.54	790.90	2145	12.8	5.2	70.2	118	9.8
8.00	788.40	2171	12.8	3.6	78.6	117	9.8
8.48	768.40	2387	12.2	5.9	66.8	118	9.3
9.00	9999.99	2444	999.9	-9.9	-99.9	118	9.3
9.36	747.80	2615	11.3	5.7	67.5	124	8.2
9.48	742.40	2676	11.0	7.7	58.8	127	8.2
10.00	9999.99	2735	999.9	-9.9	-99.9	129	7.7
10.48	716.70	2970	9.7	5.6	68.0	144	6.7
11.00	9999.99	3026	999.9	-9.9	-99.9	147	6.2
11.30	700.00	3165	8.7	6.2	64.7	154	6.2
12.00	9999.99	3312	999.9	-9.9	-99.9	162	6.7
13.00	9999.99	3605	999.9	-9.9	-99.9	177	7.7
13.18	656.60	3693	5.3	2.6	83.3	179	7.7
14.00	9999.99	3892	999.9	-9.9	-99.9	185	7.2
14.06	638.60	3920	5.1	4.5	72.5	184	7.2
15.00	9999.99	4165	999.9	-9.9	-99.9	174	6.7
15.18	613.50	4247	2.6	4.0	75.0	172	7.2
15.30	609.20	4304	2.5	2.4	84.5	170	7.2
15.48	603.10	4385	2.0	3.2	79.1	168	7.7
16.00	9999.99	4442	999.9	-9.9	-99.9	167	7.7
16.06	596.70	4471	1.5	1.7	88.6	166	8.2
16.48	582.00	4672	.0	1.1	92.3	161	9.8
17.00	9999.99	4731	999.9	-9.9	-99.9	159	10.3
17.12	573.60	4789	-.2	2.8	81.5	158	10.3
17.54	560.20	4978	-1.1	3.0	80.2	153	11.3
18.00	9999.99	5005	999.9	-9.9	-99.9	152	11.3
18.24	550.90	5112	-2.1	5.8	64.4	149	11.3
19.00	9999.99	5276	999.9	-9.9	-99.9	144	10.8
19.06	537.80	5303	-3.3	5.6	65.2	144	10.8
20.00	9999.99	5557	999.9	-9.9	-99.9	140	10.3
20.18	515.20	5642	-5.2	8.4	51.8	141	10.3
21.00	9999.99	5847	999.9	-9.9	-99.9	144	9.8
21.06	500.00	5876	-6.5	7.4	55.6	145	9.8
22.00	483.60	6137	-7.7	7.1	56.6	149	9.3

TALLAHASSEE, FLORIDA 9-26-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

IP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
22.36	472.30	6321	-8.6	5.1	66.4	146	8.2
22.48	468.40	6385	-8.7	6.4	59.9	145	8.2
23.00	465.10	6440	-8.5	13.1	34.4	144	7.7
23.48	450.40	6688	-10.3	13.7	31.8	138	7.2
24.00	9999.99	6753	999.9	-9.9	-99.9	137	7.2
24.06	444.70	6786	-10.5	30.0	20.0	138	7.2
24.18	440.80	6854	-10.9	13.4	32.5	139	7.2
24.36	435.30	6950	-11.5	30.0	20.0	141	6.7
24.48	432.00	7009	-12.0	14.3	29.7	142	6.7
25.00	428.70	7067	-12.3	30.0	20.0	143	6.7
26.00	9999.99	7359	999.9	-9.9	-99.9	152	6.2
26.48	400.00	7593	-16.0	30.0	20.0	161	5.7
27.00	9999.99	7654	999.9	-9.9	-99.9	163	5.7
27.42	385.60	7868	-17.7	30.0	20.0	172	5.1
27.48	384.10	7898	-17.9	17.0	21.0	174	5.1
28.00	381.30	7952	-18.4	9.3	44.0	176	5.1
28.12	378.40	8009	-18.8	10.6	38.9	180	5.1
28.30	374.00	8096	-19.2	30.0	20.0	187	5.1
29.00	366.60	8245	-20.1	30.0	20.0	198	4.6
30.00	9999.99	8544	999.9	-9.9	-99.9	200	5.1
31.00	9999.99	8843	999.9	-9.9	-99.9	183	6.2
32.00	9999.99	9141	999.9	-9.9	-99.9	186	5.7
32.24	318.90	9261	-28.5	8.1	45.5	194	6.2
33.00	9999.99	9462	999.9	-9.9	-99.9	208	7.2
33.42	300.00	9696	-31.6	2.8	76.2	219	8.7
34.00	9999.99	9794	999.9	-9.9	-99.9	223	9.3
34.36	287.80	9989	-33.5	2.4	79.0	229	9.8
35.00	9999.99	10107	999.9	-9.9	-99.9	233	9.8
36.00	271.20	10403	-37.1	6.0	53.3	232	9.8
37.00	9999.99	10712	999.9	-9.9	-99.9	235	10.3
37.06	258.10	10743	-40.0	6.9	47.1	235	10.3
37.48	250.00	10960	-41.9	-9.9	-99.9	234	11.3
38.00	9999.99	11021	999.9	-9.9	-99.9	234	11.8
39.00	9999.99	11327	999.9	-9.9	-99.9	230	12.3
40.00	9999.99	11632	999.9	-9.9	-99.9	232	12.9
41.00	9999.99	11938	999.9	-9.9	-99.9	236	12.9
42.00	9999.99	12244	999.9	-9.9	-99.9	239	13.9
42.36	200.00	12427	-55.7	-9.9	-99.9	238	14.4
43.00	9999.99	12544	999.9	-9.9	-99.9	237	14.4
44.00	9999.99	12837	999.9	-9.9	-99.9	244	14.4
45.00	9999.99	13130	999.9	-9.9	-99.9	250	16.5
45.36	173.80	13306	-63.1	-9.9	-99.9	255	15.9
46.00	170.20	13435	-62.8	-9.9	-99.9	258	15.4
46.30	166.10	13585	-63.5	-9.9	-99.9	267	13.9
47.00	9999.99	13729	999.9	-9.9	-99.9	276	12.3
47.24	159.20	13844	-65.1	-9.9	-99.9	279	11.3
48.00	9999.99	14040	999.9	-9.9	-99.9	283	9.3
48.30	150.00	14204	-68.0	-9.9	-99.9	286	8.2
49.00	9999.99	14354	999.9	-9.9	-99.9	288	7.2
50.00	9999.99	14655	999.9	-9.9	-99.9	292	4.6
50.54	132.90	14925	-71.8	-9.9	-99.9	306	3.1
51.00	9999.99	14956	999.9	-9.9	-99.9	308	3.1
52.00	125.50	15262	-72.3	-9.9	-99.9	349	2.1
52.36	121.90	15435	-70.2	-9.9	-99.9	23	1.5

TALLAHASSEE, FLORIDA 9-26-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

AP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
52.54	119.90	15533	-69.9	-9.9	-99.9	42	1.5
53.00	9999.99	15565	999.9	-9.9	-99.9	48	1.5
53.54	113.70	15848	-71.5	-9.9	-99.9	81	2.6
54.00	9999.99	15878	999.9	-9.9	-99.9	84	2.6
54.36	109.70	16059	-71.2	-9.9	-99.9	100	3.6
55.00	9999.99	16187	999.9	-9.9	-99.9	112	4.6
56.00	9999.99	16508	999.9	-9.9	-99.9	115	5.1
56.18	100.00	16604	-73.4	-9.9	-99.9	109	5.1
57.00	9999.99	16833	999.9	-9.9	-99.9	94	4.6
57.30	93.50	16996	-75.1	-9.9	-99.9	83	5.7
57.42	92.50	17058	-73.6	-9.9	-99.9	78	5.7
58.00	9999.99	17150	999.9	-9.9	-99.9	72	6.2
58.30	88.70	17304	-72.6	-9.9	-99.9	67	6.7
58.54	87.00	17418	-70.7	-9.9	-99.9	63	7.2
59.00	9999.99	17447	999.9	-9.9	-99.9	62	7.2
59.42	83.70	17649	-68.4	-9.9	-99.9	57	7.7
60.00	9999.99	17743	999.9	-9.9	-99.9	55	8.2
60.54	78.60	18026	-68.3	-9.9	-99.9	58	9.3
61.00	9999.99	18058	999.9	-9.9	-99.9	58	9.3
62.00	9999.99	18382	999.9	-9.9	-99.9	62	9.3
62.12	73.30	18447	-66.5	-9.9	-99.9	63	9.3
62.36	71.90	18563	-67.1	-9.9	-99.9	65	8.7
63.00	9999.99	18693	999.9	-9.9	-99.9	67	8.2
63.06	70.00	18725	-66.6	-9.9	-99.9	67	8.2
64.00	9999.99	19025	999.9	-9.9	-99.9	72	7.2
64.42	64.10	19258	-66.2	-9.9	-99.9	78	7.2
65.00	9999.99	19357	999.9	-9.9	-99.9	80	7.2
66.00	9999.99	19687	999.9	-9.9	-99.9	87	6.7
67.00	9999.99	20017	999.9	-9.9	-99.9	82	7.2
68.00	53.70	20347	-60.2	-9.9	-99.9	80	7.2
69.00	9999.99	20719	999.9	-9.9	-99.9	81	7.7
69.12	50.00	20793	-60.0	-9.9	-99.9	80	7.7
70.00	9999.99	21086	999.9	-9.9	-99.9	75	7.7
71.00	9999.99	21453	999.9	-9.9	-99.9	74	7.7
72.00	9999.99	21820	999.9	-9.9	-99.9	76	8.2
73.00	9999.99	22187	999.9	-9.9	-99.9	78	8.2
74.00	9999.99	22554	999.9	-9.9	-99.9	86	7.2
75.00	9999.99	22921	999.9	-9.9	-99.9	90	6.2
76.00	9999.99	23287	999.9	-9.9	-99.9	88	6.2
77.00	9999.99	23654	999.9	-9.9	-99.9	93	6.7
78.00	30.00	24021	-54.8	-9.9	-99.9	85	6.7
78.42	28.60	24326	-55.1	-9.9	-99.9	86	6.7
79.00	9999.99	24444	999.9	-9.9	-99.9	87	6.7
79.42	26.90	24720	-52.2	-9.9	-99.9	97	5.7
80.00	9999.99	24860	999.9	-9.9	-99.9	102	5.1
81.00	9999.99	25326	999.9	-9.9	-99.9	86	4.1
82.00	9999.99	25792	999.9	-9.9	-99.9	85	5.1
83.00	9999.99	26258	999.9	-9.9	-99.9	86	5.7
83.48	20.00	26631	-54.1	-9.9	-99.9	74	6.7
84.00	9999.99	26724	999.9	-9.9	-99.9	71	7.2
85.00	9999.99	27189	999.9	-9.9	-99.9	68	8.7
85.06	18.20	27236	-54.2	-9.9	-99.9	68	8.7
86.00	9999.99	27642	999.9	-9.9	-99.9	66	9.8
86.30	16.50	27868	-51.8	-9.9	-99.9	66	10.3

TALLAHASSEE, FLORIDA 9-26-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

P TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
87.00	9999.99	28115	999.9	-9.9	-99.9	66	11.3
88.00	9999.99	28608	999.9	-9.9	-99.9	67	11.8
89.00	9999.99	29102	999.9	-9.9	-99.9	69	11.8
89.48	12.90	29497	-42.8	-9.9	-99.9	71	10.8
90.00	9999.99	29605	999.9	-9.9	-99.9	72	10.3
91.00	9999.99	30142	999.9	-9.9	-99.9	70	8.7
92.00	9999.99	30680	999.9	-9.9	-99.9	73	8.2
93.00	10.00	31218	-42.7	-9.9	-99.9	73	7.7
94.00	9999.99	31766	999.9	-9.9	-99.9	73	8.2
94.18	9.00	31931	-41.7	-9.9	-99.9	999	999.9
94.48	8.60	32240	-42.0	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-27-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

EL P TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1012.20	18	25.5	2.9	84.0	90	2.6
.24	1000.00	125	24.5	1.6	90.6	83	4.6
1.00	9999.99	289	999.9	-9.9	-99.9	73	7.2
2.00	9999.99	562	999.9	-9.9	-99.9	106	7.7
2.54	925.00	808	21.7	2.2	87.5	120	8.2
3.00	9999.99	835	999.9	-9.9	-99.9	121	8.2
4.00	894.40	1100	19.3	1.5	91.1	135	8.2
4.48	872.00	1319	18.8	4.1	76.7	145	8.7
5.00	9999.99	1374	999.9	-9.9	-99.9	148	8.7
5.36	850.00	1539	17.5	2.6	84.4	153	8.7
6.00	9999.99	1650	999.9	-9.9	-99.9	156	8.7
7.00	9999.99	1926	999.9	-9.9	-99.9	161	8.7
7.42	794.00	2120	14.7	3.2	81.1	159	8.7
7.54	789.30	2171	14.6	5.4	69.5	158	8.7
8.00	9999.99	2198	999.9	-9.9	-99.9	158	8.7
8.30	774.30	2333	13.9	5.8	67.8	158	9.3
9.00	9999.99	2466	999.9	-9.9	-99.9	158	9.3
9.06	759.80	2492	12.9	3.6	78.5	158	9.3
10.00	9999.99	2721	999.9	-9.9	-99.9	156	8.7
10.06	737.20	2746	11.3	5.9	66.8	156	8.7
11.00	9999.99	2974	999.9	-9.9	-99.9	152	8.2
11.48	700.00	3177	8.6	3.6	77.7	151	8.2
12.00	9999.99	3235	999.9	-9.9	-99.9	151	8.2
13.00	9999.99	3527	999.9	-9.9	-99.9	153	8.2
13.06	668.60	3556	6.0	1.4	91.1	154	8.2
13.48	653.00	3750	4.8	1.9	87.4	158	7.7
14.00	9999.99	3801	999.9	-9.9	-99.9	159	7.7
14.48	632.70	4007	3.0	.8	94.5	164	7.2
15.00	9999.99	4059	999.9	-9.9	-99.9	165	7.2
16.00	9999.99	4317	999.9	-9.9	-99.9	166	8.7
16.06	607.00	4343	1.3	.9	93.9	166	8.7
16.54	592.00	4545	.6	2.4	84.0	167	10.8
17.00	9999.99	4569	999.9	-9.9	-99.9	167	10.8
17.18	585.00	4640	.1	1.6	88.9	168	10.8
17.36	579.60	4715	-.4	1.1	92.7	170	10.8
18.00	9999.99	4819	999.9	-9.9	-99.9	172	10.8
18.24	564.70	4923	-1.2	3.9	74.7	174	10.8
19.00	9999.99	5083	999.9	-9.9	-99.9	176	11.3
19.12	549.80	5136	-2.0	3.4	77.7	177	11.3
20.00	9999.99	5355	999.9	-9.9	-99.9	181	12.3
20.18	529.40	5437	-3.3	5.8	64.1	180	12.3
21.00	9999.99	5626	999.9	-9.9	-99.9	179	12.3
21.18	511.60	5707	-5.1	6.5	60.0	176	11.8
22.00	500.00	5887	-6.1	4.5	70.3	169	11.3
22.24	492.90	5999	-6.8	1.8	87.5	169	11.3
22.42	488.20	6074	-7.1	1.3	90.7	168	11.8
23.00	9999.99	6148	999.9	-9.9	-99.9	168	11.8
23.06	482.10	6172	-7.5	2.9	80.0	168	11.8
24.00	9999.99	6416	999.9	-9.9	-99.9	172	13.4
24.18	462.30	6497	-10.0	4.6	68.9	175	12.9
25.00	9999.99	6709	999.9	-9.9	-99.9	182	10.8
25.12	446.20	6770	-11.2	2.4	82.4	186	10.3
25.24	443.10	6824	-10.7	1.9	86.3	189	9.8
26.00	9999.99	6991	999.9	-9.9	-99.9	199	7.7

TALLAHASSEE, FLORIDA 9-27-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

P TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
27.00	9999.99	7270	999.9	-9.9	-99.9	199	7.7
28.00	9999.99	7548	999.9	-9.9	-99.9	194	8.7
28.12	400.00	7604	-15.6	1.8	86.0	196	8.7
29.00	9999.99	7827	999.9	-9.9	-99.9	202	7.7
30.00	9999.99	8105	999.9	-9.9	-99.9	205	6.7
31.00	9999.99	8383	999.9	-9.9	-99.9	188	5.1
32.00	347.10	8661	-22.6	3.0	76.2	189	4.1
33.00	9999.99	8946	999.9	-9.9	-99.9	207	5.7
34.00	9999.99	9230	999.9	-9.9	-99.9	213	6.7
35.00	9999.99	9515	999.9	-9.9	-99.9	222	6.2
35.42	300.00	9714	-31.0	3.4	71.4	223	6.7
36.00	9999.99	9798	999.9	-9.9	-99.9	223	7.2
37.00	9999.99	10078	999.9	-9.9	-99.9	218	8.7
38.00	9999.99	10358	999.9	-9.9	-99.9	223	9.8
39.00	9999.99	10638	999.9	-9.9	-99.9	228	10.8
39.30	257.50	10778	-40.0	5.0	58.0	230	10.8
40.00	9999.99	10922	999.9	-9.9	-99.9	232	10.3
40.12	250.00	10979	-41.8	-9.9	-99.9	232	10.3
41.00	9999.99	11209	999.9	-9.9	-99.9	233	11.3
42.00	9999.99	11497	999.9	-9.9	-99.9	233	11.8
43.00	9999.99	11785	999.9	-9.9	-99.9	232	12.3
44.00	9999.99	12073	999.9	-9.9	-99.9	234	13.9
45.00	9999.99	12361	999.9	-9.9	-99.9	238	13.9
45.18	200.00	12447	-55.3	-9.9	-99.9	239	13.9
46.00	9999.99	12634	999.9	-9.9	-99.9	241	13.4
47.00	9999.99	12900	999.9	-9.9	-99.9	248	11.8
48.00	9999.99	13167	999.9	-9.9	-99.9	248	12.3
49.00	9999.99	13433	999.9	-9.9	-99.9	245	13.9
49.36	166.40	13593	-65.4	-9.9	-99.9	253	13.4
50.00	9999.99	13739	999.9	-9.9	-99.9	260	12.9
50.24	158.60	13885	-66.5	-9.9	-99.9	265	11.8
51.00	9999.99	14068	999.9	-9.9	-99.9	272	10.3
51.30	150.00	14220	-69.6	-9.9	-99.9	282	9.3
52.00	9999.99	14372	999.9	-9.9	-99.9	292	8.2
52.48	140.30	14616	-72.0	-9.9	-99.9	317	5.7
53.00	9999.99	14667	999.9	-9.9	-99.9	322	5.1
54.00	9999.99	14920	999.9	-9.9	-99.9	9	3.6
54.24	131.00	15021	-70.6	-9.9	-99.9	23	3.6
55.00	9999.99	15185	999.9	-9.9	-99.9	45	4.1
55.54	122.20	15432	-72.6	-9.9	-99.9	72	4.6
56.00	9999.99	15461	999.9	-9.9	-99.9	75	4.6
56.12	120.40	15519	-72.7	-9.9	-99.9	77	4.6
56.30	118.60	15608	-71.8	-9.9	-99.9	79	4.6
57.00	9999.99	15766	999.9	-9.9	-99.9	84	5.1
57.18	113.60	15861	-73.2	-9.9	-99.9	85	5.7
58.00	9999.99	16059	999.9	-9.9	-99.9	86	7.2
59.00	9999.99	16343	999.9	-9.9	-99.9	89	9.3
59.06	104.10	16371	-74.2	-9.9	-99.9	89	9.3
60.00	100.00	16606	-73.7	-9.9	-99.9	90	10.3
60.24	98.20	16712	-74.1	-9.9	-99.9	92	10.3
61.00	9999.99	16871	999.9	-9.9	-99.9	96	9.8
61.12	94.70	16924	-72.0	-9.9	-99.9	96	9.3
62.00	9999.99	17127	999.9	-9.9	-99.9	97	7.7
63.00	9999.99	17380	999.9	-9.9	-99.9	84	6.2

TALLAHASSEE, FLORIDA 9-27-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

E( ) TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
63.42	85.10	17557	-70.3	-9.9	-99.9	76	6.2
64.00	9999.99	17630	999.9	-9.9	-99.9	72	6.2
64.24	82.70	17728	-68.3	-9.9	-99.9	70	6.7
65.00	9999.99	17879	999.9	-9.9	-99.9	66	7.2
65.24	79.30	17980	-67.6	-9.9	-99.9	68	7.2
66.00	9999.99	18146	999.9	-9.9	-99.9	71	7.7
67.00	9999.99	18423	999.9	-9.9	-99.9	80	5.7
67.06	73.40	18451	-62.6	-9.9	-99.9	81	5.1
68.00	9999.99	18690	999.9	-9.9	-99.9	86	2.6
68.12	70.00	18743	-62.7	-9.9	-99.9	86	2.1
69.00	67.90	18932	-61.9	-9.9	-99.9	84	.5
70.00	9999.99	19190	999.9	-9.9	-99.9	333	.5
71.00	9999.99	19447	999.9	-9.9	-99.9	355	2.1
71.36	60.90	19602	-63.4	-9.9	-99.9	12	3.1
72.00	9999.99	19706	999.9	-9.9	-99.9	24	3.6
73.00	9999.99	19967	999.9	-9.9	-99.9	18	4.6
74.00	9999.99	20228	999.9	-9.9	-99.9	18	5.7
75.00	9999.99	20488	999.9	-9.9	-99.9	28	6.7
76.00	9999.99	20749	999.9	-9.9	-99.9	43	7.2
76.18	50.00	20827	-58.9	-9.9	-99.9	48	7.7
77.00	9999.99	21027	999.9	-9.9	-99.9	61	8.2
78.00	9999.99	21313	999.9	-9.9	-99.9	70	8.7
78.42	44.80	21513	-60.7	-9.9	-99.9	76	9.3
79.00	9999.99	21587	999.9	-9.9	-99.9	78	9.3
80.00	9999.99	21835	999.9	-9.9	-99.9	78	8.7
81.00	9999.99	22083	999.9	-9.9	-99.9	71	8.2
82.00	9999.99	22331	999.9	-9.9	-99.9	62	8.7
82.12	39.00	22381	-58.2	-9.9	-99.9	63	8.7
83.00	9999.99	22580	999.9	-9.9	-99.9	68	8.7
83.24	37.20	22680	-56.3	-9.9	-99.9	70	8.7
84.00	9999.99	22953	999.9	-9.9	-99.9	74	8.2
85.00	9999.99	23408	999.9	-9.9	-99.9	85	9.8
85.12	32.70	23499	-56.4	-9.9	-99.9	87	9.8
86.00	9999.99	23987	999.9	-9.9	-99.9	95	10.8
86.06	30.00	24048	-55.0	-9.9	-99.9	96	10.6
87.00	9999.99	24717	999.9	-9.9	-99.9	101	10.8
88.00	9999.99	25461	999.9	-9.9	-99.9	104	10.8
89.00	9999.99	26205	999.9	-9.9	-99.9	100	9.8
89.36	20.00	26651	-53.0	-9.9	-99.9	97	8.7
89.42	19.80	26716	-52.9	-9.9	-99.9	96	8.7
90.00	9999.99	26844	999.9	-9.9	-99.9	95	8.2
90.54	18.30	27227	-50.3	-9.9	-99.9	83	8.2
91.00	9999.99	27263	999.9	-9.9	-99.9	82	8.2
92.00	9999.99	27628	999.9	-9.9	-99.9	70	8.2
93.00	9999.99	27993	999.9	-9.9	-99.9	67	7.7
94.00	9999.99	28358	999.9	-9.9	-99.9	72	6.7
95.00	14.60	28723	-44.0	-9.9	-99.9	92	5.7
96.00	9999.99	29132	999.9	-9.9	-99.9	125	5.7
97.00	9999.99	29541	999.9	-9.9	-99.9	142	6.2
98.00	9999.99	29950	999.9	-9.9	-99.9	138	5.7
98.12	12.00	30032	-46.9	-9.9	-99.9	136	5.1
99.00	9999.99	30377	999.9	-9.9	-99.9	129	4.1
100.00	9999.99	30809	999.9	-9.9	-99.9	101	2.6
101.00	10.00	31241	-47.0	-9.9	-99.9	89	3.6

TALLAHASSEE, FLORIDA 9-27-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
102.00	9999.99	31709	999.9	-9.9	-99.9	103	3.6
102.30	9.00	31943	-44.7	-9.9	-99.9	107	3.6
103.00	9999.99	32182	999.9	-9.9	-99.9	111	3.6
103.18	8.50	32325	-44.9	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-27-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1012.20	18	23.8	.3	98.0	90	1.5
.24	1000.00	124	23.0	.5	97.0	108	4.1
.48	988.40	227	22.6	.5	96.9	125	6.7
1.00	9999.99	281	999.9	-9.9	-99.9	134	7.7
1.30	967.30	416	23.3	.8	95.1	143	7.7
2.00	9999.99	555	999.9	-9.9	-99.9	152	7.2
2.54	925.00	806	20.9	1.1	93.8	149	7.2
3.00	9999.99	834	999.9	-9.9	-99.9	149	7.2
3.18	913.20	918	20.3	2.4	86.2	148	7.2
4.00	9999.99	1116	999.9	-9.9	-99.9	144	7.2
4.12	886.60	1173	18.8	2.2	86.9	145	7.2
4.24	881.30	1225	18.6	3.5	80.0	145	7.2
4.54	867.70	1359	17.8	3.1	82.2	147	7.2
5.00	9999.99	1388	999.9	-9.9	-99.9	147	7.2
5.12	858.90	1446	17.1	.9	94.8	148	7.2
5.30	850.00	1535	17.0	2.2	86.7	150	6.7
6.00	9999.99	1672	999.9	-9.9	-99.9	153	6.7
7.00	9999.99	1947	999.9	-9.9	-99.9	162	5.7
7.06	807.40	1974	14.3	.7	95.5	163	5.7
8.00	9999.99	2237	999.9	-9.9	-99.9	177	3.6
9.00	9999.99	2529	999.9	-9.9	-99.9	198	2.6
9.30	742.80	2675	9.6	.7	95.8	206	2.6
10.00	9999.99	2829	999.9	-9.9	-99.9	214	2.6
11.00	9999.99	3136	999.9	-9.9	-99.9	230	3.1
11.06	700.00	3167	7.4	1.1	93.1	233	3.1
11.42	685.30	3342	6.8	2.0	86.9	247	4.1
12.00	9999.99	3437	999.9	-9.9	-99.9	255	4.6
12.36	662.00	3626	4.7	1.5	90.4	260	5.7
13.00	9999.99	3751	999.9	-9.9	-99.9	263	6.7
14.00	9999.99	4065	999.9	-9.9	-99.9	255	7.7
14.18	620.00	4159	2.5	2.7	82.3	253	8.2
15.00	9999.99	4373	999.9	-9.9	-99.9	249	9.3
15.30	592.50	4525	.0	4.4	71.9	249	9.3
15.36	590.20	4556	-.3	4.9	69.3	249	9.3
15.48	585.40	4622	-.3	1.1	92.7	249	9.3
16.00	580.60	4688	-.5	.9	93.6	249	9.3
17.00	9999.99	4991	999.9	-9.9	-99.9	249	8.7
18.00	9999.99	5293	999.9	-9.9	-99.9	242	8.2
18.42	523.70	5505	-6.6	1.3	90.7	238	8.2
19.00	9999.99	5590	999.9	-9.9	-99.9	237	8.2
19.12	514.30	5646	-6.8	3.8	74.1	236	8.2
19.54	500.00	5867	-7.4	4.9	67.9	231	7.7
20.00	9999.99	5895	999.9	-9.9	-99.9	230	7.7
20.48	484.30	6115	-8.9	3.8	73.6	215	8.7
21.00	9999.99	6179	999.9	-9.9	-99.9	211	8.7
21.24	472.50	6306	-9.9	1.8	86.6	210	9.3
22.00	9999.99	6497	999.9	-9.9	-99.9	209	9.8
22.12	457.10	6561	-10.7	4.0	72.4	210	9.3
23.00	9999.99	6804	999.9	-9.9	-99.9	216	8.2
24.00	9999.99	7108	999.9	-9.9	-99.9	220	5.7
24.48	412.10	7351	-15.7	4.9	65.8	226	5.1
25.00	9999.99	7415	999.9	-9.9	-99.9	228	5.1
25.30	400.00	7576	-16.7	6.5	57.1	234	5.7
26.00	9999.99	7738	999.9	-9.9	-99.9	240	6.2

TALLAHASSEE, FLORIDA 9-27-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

E(' TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
27.00	9999.99	8061	999.9	-9.9	-99.9	258	5.7
27.30	366.70	8223	-21.5	4.2	68.7	264	5.7
27.54	360.10	8357	-22.3	6.4	55.7	269	5.7
28.00	9999.99	8391	999.9	-9.9	-99.9	270	5.7
28.54	343.90	8693	-25.2	5.0	63.0	272	5.7
29.00	9999.99	8727	999.9	-9.9	-99.9	272	5.7
29.36	332.90	8929	-26.8	6.8	52.6	272	5.1
30.00	9999.99	9057	999.9	-9.9	-99.9	272	5.1
30.36	318.40	9249	-29.3	5.3	59.8	265	5.7
31.00	9999.99	9370	999.9	-9.9	-99.9	261	6.2
32.00	300.00	9671	-32.5	7.0	49.3	261	7.7
33.00	9999.99	9951	999.9	-9.9	-99.9	259	8.7
34.00	9999.99	10230	999.9	-9.9	-99.9	251	9.8
34.54	267.00	10482	-39.0	11.5	28.1	246	10.3
35.00	9999.99	10509	999.9	-9.9	-99.9	245	10.3
35.18	262.80	10590	-39.5	30.0	20.0	244	10.3
35.30	260.80	10643	-40.0	30.0	20.0	244	10.3
36.00	9999.99	10787	999.9	-9.9	-99.9	242	10.3
36.30	250.00	10930	-42.6	-9.9	-99.9	243	10.8
37.00	9999.99	11076	999.9	-9.9	-99.9	244	11.3
38.00	9999.99	11369	999.9	-9.9	-99.9	245	12.3
39.00	9999.99	11662	999.9	-9.9	-99.9	243	11.3
40.00	9999.99	11955	999.9	-9.9	-99.9	237	13.4
41.00	9999.99	12248	999.9	-9.9	-99.9	239	13.9
41.30	200.00	12395	-55.5	-9.9	-99.9	247	13.4
42.00	9999.99	12557	999.9	-9.9	-99.9	256	12.3
42.48	187.10	12816	-59.3	-9.9	-99.9	268	13.4
43.00	9999.99	12873	999.9	-9.9	-99.9	271	13.4
44.00	9999.99	13159	999.9	-9.9	-99.9	276	13.9
44.30	173.00	13302	-63.2	-9.9	-99.9	282	12.3
45.00	9999.99	13454	999.9	-9.9	-99.9	289	10.8
45.36	163.80	13637	-64.6	-9.9	-99.9	313	7.2
46.00	9999.99	13779	999.9	-9.9	-99.9	331	4.6
47.00	9999.99	14134	999.9	-9.9	-99.9	31	1.5
47.06	150.00	14170	-68.5	-9.9	-99.9	38	1.5
48.00	9999.99	14455	999.9	-9.9	-99.9	90	2.6
48.18	140.70	14550	-71.9	-9.9	-99.9	98	2.1
49.00	9999.99	14767	999.9	-9.9	-99.9	116	1.5
49.36	131.40	14953	-72.5	-9.9	-99.9	81	1.5
50.00	9999.99	15072	999.9	-9.9	-99.9	58	1.5
50.06	128.10	15102	-73.6	-9.9	-99.9	54	1.5
50.36	124.90	15250	-73.3	-9.9	-99.9	33	2.1
51.00	9999.99	15362	999.9	-9.9	-99.9	18	2.6
51.48	118.00	15585	-70.2	-9.9	-99.9	38	3.6
52.00	9999.99	15644	999.9	-9.9	-99.9	43	4.1
53.00	9999.99	15940	999.9	-9.9	-99.9	56	6.2
54.00	9999.99	16236	999.9	-9.9	-99.9	63	5.7
55.00	9999.99	16531	999.9	-9.9	-99.9	62	5.7
5.06	100.00	16561	-73.6	-9.9	-99.9	61	5.7
55.36	97.70	16697	-73.9	-9.9	-99.9	54	5.1
56.00	9999.99	16815	999.9	-9.9	-99.9	48	5.1
57.00	9999.99	17111	999.9	-9.9	-99.9	50	6.2
58.00	9999.99	17407	999.9	-9.9	-99.9	64	6.7
58.48	83.20	17644	-69.8	-9.9	-99.9	75	7.2

TALLAHASSEE, FLORIDA 9-27-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

E P TIME (...N/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
59.00	9999.99	17704	999.9	-9.9	-99.9	78	7.2
59.54	78.70	17975	-70.1	-9.9	-99.9	87	6.7
60.00	9999.99	18007	999.9	-9.9	-99.9	88	6.7
60.48	75.00	18263	-68.0	-9.9	-99.9	87	5.1
61.00	9999.99	18327	999.9	-9.9	-99.9	87	4.6
62.00	9999.99	18646	999.9	-9.9	-99.9	63	4.1
62.06	70.00	18678	-66.9	-9.9	-99.9	62	4.1
63.00	9999.99	18965	999.9	-9.9	-99.9	55	5.1
64.00	9999.99	19284	999.9	-9.9	-99.9	61	6.7
64.06	63.00	19316	-66.5	-9.9	-99.9	62	6.7
65.00	9999.99	19586	999.9	-9.9	-99.9	75	8.7
66.00	9999.99	19886	999.9	-9.9	-99.9	87	9.8
66.06	57.10	19916	-62.8	-9.9	-99.9	88	9.8
67.00	9999.99	20200	999.9	-9.9	-99.9	101	9.3
67.18	53.70	20294	-63.0	-9.9	-99.9	105	8.7
68.00	9999.99	20515	999.9	-9.9	-99.9	115	8.2
68.42	50.00	20736	-60.9	-9.9	-99.9	123	6.7
69.00	9999.99	20839	999.9	-9.9	-99.9	127	6.2
70.00	9999.99	21182	999.9	-9.9	-99.9	135	3.1
71.00	9999.99	21525	999.9	-9.9	-99.9	52	2.1
71.24	43.10	21662	-59.5	-9.9	-99.9	43	2.6
72.00	41.60	21885	-57.6	-9.9	-99.9	29	3.6
73.00	9999.99	22251	999.9	-9.9	-99.9	35	4.6
74.00	9999.99	22617	999.9	-9.9	-99.9	57	5.7
75.00	9999.99	22982	999.9	-9.9	-99.9	82	5.1
75.48	33.40	23275	-56.3	-9.9	-99.9	90	5.1
76.00	9999.99	23357	999.9	-9.9	-99.9	92	5.1
76.42	31.50	23646	-57.5	-9.9	-99.9	90	5.1
77.00	9999.99	23762	999.9	-9.9	-99.9	89	5.1
77.30	30.00	23955	-56.4	-9.9	-99.9	79	4.6
78.00	9999.99	24174	999.9	-9.9	-99.9	67	4.1
78.24	28.20	24349	-55.2	-9.9	-99.9	55	5.1
79.00	9999.99	24587	999.9	-9.9	-99.9	39	6.2
79.24	26.50	24745	-56.1	-9.9	-99.9	37	7.2
80.00	9999.99	24976	999.9	-9.9	-99.9	34	8.2
80.30	24.80	25169	-54.3	-9.9	-99.9	34	8.7
81.00	9999.99	25376	999.9	-9.9	-99.9	34	9.3
81.48	22.80	25707	-55.1	-9.9	-99.9	43	9.3
82.00	9999.99	25787	999.9	-9.9	-99.9	45	9.3
83.00	9999.99	26189	999.9	-9.9	-99.9	61	9.3
83.54	20.00	26551	-51.3	-9.9	-99.9	81	7.7
84.00	9999.99	26594	999.9	-9.9	-99.9	83	7.7
85.00	9999.99	27022	999.9	-9.9	-99.9	97	7.7
86.00	9999.99	27450	999.9	-9.9	-99.9	107	7.2
87.00	9999.99	27878	999.9	-9.9	-99.9	94	4.6
87.18	16.00	28006	-50.0	-9.9	-99.9	83	5.1
88.00	9999.99	28336	999.9	-9.9	-99.9	55	5.7
88.12	15.00	28430	-47.5	-9.9	-99.9	50	5.7
89.00	9999.99	28727	999.9	-9.9	-99.9	34	6.7
89.18	14.10	28839	-47.6	-9.9	-99.9	32	7.2
90.00	9999.99	29155	999.9	-9.9	-99.9	28	7.7
90.30	13.00	29381	-43.7	-9.9	-99.9	32	7.7
91.00	9999.99	29628	999.9	-9.9	-99.9	37	7.7
92.00	9999.99	30121	999.9	-9.9	-99.9	41	7.2

TALLAHASSEE, FLORIDA 9-27-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

ELAPSED TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
92.18	11.40	30269	-41.0	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-28-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1011.40	18	25.7	1.8	90.0	10	1.5
.24	1000.00	118	25.3	2.7	84.8	18	1.5
1.00	9999.99	287	999.9	-9.9	-99.9	32	2.1
1.42	959.10	485	22.6	2.2	87.5	73	1.5
2.00	9999.99	564	999.9	-9.9	-99.9	89	1.5
2.54	925.00	801	21.4	5.3	71.6	132	3.1
3.00	9999.99	831	999.9	-9.9	-99.9	138	3.1
3.18	912.30	921	21.0	6.7	65.0	141	3.6
3.54	894.90	1088	19.8	6.2	67.0	147	4.1
4.00	9999.99	1117	999.9	-9.9	-99.9	148	4.1
4.12	885.80	1176	19.2	4.3	75.9	149	4.1
4.30	877.60	1256	18.8	6.1	67.2	150	4.6
5.00	9999.99	1393	999.9	-9.9	-99.9	152	4.6
5.30	850.00	1530	16.8	4.5	74.7	152	4.6
6.00	9999.99	1674	999.9	-9.9	-99.9	152	4.1
6.24	824.50	1789	15.1	5.4	70.0	152	4.1
6.36	819.30	1843	14.7	4.3	75.3	151	4.6
6.48	814.00	1898	14.6	6.0	66.8	151	4.6
7.00	9999.99	1954	999.9	-9.9	-99.9	151	4.6
7.18	800.60	2039	13.9	6.5	64.4	153	4.6
7.36	792.60	2123	13.4	5.1	70.7	156	4.6
8.00	9999.99	2234	999.9	-9.9	-99.9	159	4.6
8.42	764.50	2427	11.7	6.4	64.6	154	4.1
8.54	758.40	2494	11.3	5.3	69.7	153	3.6
9.00	755.40	2527	11.2	3.0	81.6	152	3.6
9.36	740.50	2694	11.0	4.9	71.6	132	3.1
10.00	9999.99	2808	999.9	-9.9	-99.9	119	3.1
10.24	720.50	2922	9.6	4.4	73.6	121	2.6
11.00	9999.99	3102	999.9	-9.9	-99.9	125	2.1
11.12	700.00	3162	7.4	1.8	88.4	132	2.1
12.00	681.00	3389	6.9	5.5	67.6	160	1.5
12.42	664.50	3590	5.7	5.7	66.5	167	1.5
13.00	9999.99	3660	999.9	-9.9	-99.9	170	1.5
13.06	654.80	3710	4.7	3.2	79.6	167	1.5
13.48	637.60	3928	4.0	3.5	77.7	143	.5
14.00	632.90	3988	4.0	5.2	68.5	136	.5
14.18	625.80	4080	3.2	5.2	68.7	113	.5
14.36	619.00	4168	2.4	1.7	88.5	92	1.0
15.00	9999.99	4284	999.9	-9.9	-99.9	63	1.0
15.36	597.20	4457	.1	.8	94.2	124	.5
16.00	9999.99	4574	999.9	-9.9	-99.9	165	.5
16.42	573.70	4779	-1.0	1.7	88.5	209	1.0
17.00	9999.99	4869	999.9	-9.9	-99.9	228	1.0
17.42	552.50	5079	-3.2	1.1	92.6	224	1.0
17.54	548.60	5135	-3.3	4.1	73.0	223	1.0
18.00	9999.99	5167	999.9	-9.9	-99.9	222	1.0
18.06	544.20	5199	-3.5	3.8	74.8	230	1.0
18.24	537.70	5294	-4.3	1.3	90.5	253	1.0
18.48	529.10	5421	-5.5	1.9	86.7	283	.5
19.00	9999.99	5483	999.9	-9.9	-99.9	298	.5
19.12	520.80	5545	-5.3	1.0	93.0	295	.5
20.00	9999.99	5801	999.9	-9.9	-99.9	284	1.0
20.12	500.00	5865	-7.4	1.2	91.3	269	1.0
21.00	9999.99	6097	999.9	-9.9	-99.9	190	1.5

TALLAHASSEE, FLORIDA 9-28-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 2

ET TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
22.00	9999.99	6387	999.9	-9.9	-99.9	186	3.6
22.06	465.80	6416	-9.3	1.6	88.2	188	3.6
23.00	9999.99	6699	999.9	-9.9	-99.9	210	4.6
24.00	9999.99	7013	999.9	-9.9	-99.9	217	5.7
25.00	9999.99	7328	999.9	-9.9	-99.9	217	5.1
25.48	400.00	7579	-16.3	2.4	81.6	225	4.1
26.00	9999.99	7644	999.9	-9.9	-99.9	227	4.1
27.00	9999.99	7967	999.9	-9.9	-99.9	232	4.1
28.00	9999.99	8291	999.9	-9.9	-99.9	215	3.6
29.00	9999.99	8615	999.9	-9.9	-99.9	208	3.6
30.00	9999.99	8938	999.9	-9.9	-99.9	212	3.1
30.12	329.80	9003	-26.6	3.5	71.7	211	3.1
31.00	9999.99	9249	999.9	-9.9	-99.9	209	3.6
32.00	9999.99	9556	999.9	-9.9	-99.9	209	4.6
32.24	300.00	9679	-32.5	4.2	65.6	208	4.6
33.00	9999.99	9872	999.9	-9.9	-99.9	206	4.6
33.12	289.20	9936	-34.6	4.3	64.6	205	4.6
34.00	9999.99	10148	999.9	-9.9	-99.9	201	4.1
34.42	273.10	10334	-38.1	7.7	44.1	198	4.6
35.00	9999.99	10425	999.9	-9.9	-99.9	197	4.6
35.30	263.60	10577	-39.9	9.0	37.2	201	5.1
36.00	9999.99	10727	999.9	-9.9	-99.9	205	5.7
36.42	250.00	10936	-42.9	-9.9	-99.9	212	6.2
[illegible]7.00	9999.99	11024	999.9	-9.9	-99.9	215	6.2
38.00	9999.99	11316	999.9	-9.9	-99.9	223	6.2
39.00	9999.99	11609	999.9	-9.9	-99.9	224	7.2
40.00	9999.99	11902	999.9	-9.9	-99.9	219	8.7
41.00	9999.99	12194	999.9	-9.9	-99.9	223	11.3
41.42	200.00	12399	-55.8	-9.9	-99.9	227	12.3
42.00	9999.99	12483	999.9	-9.9	-99.9	229	12.9
43.00	9999.99	12764	999.9	-9.9	-99.9	227	10.8
44.00	9999.99	13045	999.9	-9.9	-99.9	217	8.2
44.30	176.50	13185	-61.2	-9.9	-99.9	213	7.7
45.00	9999.99	13345	999.9	-9.9	-99.9	208	7.2
46.00	9999.99	13665	999.9	-9.9	-99.9	203	6.2
47.00	9999.99	13985	999.9	-9.9	-99.9	236	4.1
47.36	150.00	14177	-68.9	-9.9	-99.9	256	3.6
48.00	9999.99	14308	999.9	-9.9	-99.9	270	3.1
49.00	9999.99	14635	999.9	-9.9	-99.9	321	2.1
49.30	135.10	14799	-71.4	-9.9	-99.9	13	1.5
49.54	132.20	14927	-70.5	-9.9	-99.9	53	1.0
50.00	9999.99	14959	999.9	-9.9	-99.9	63	1.0
50.30	128.00	15119	-70.4	-9.9	-99.9	81	2.1
51.00	125.30	15245	-71.2	-9.9	-99.9	96	2.6
52.00	9999.99	15556	999.9	-9.9	-99.9	103	3.6
52.36	115.20	15742	-71.5	-9.9	-99.9	109	3.1
53.00	9999.99	15875	999.9	-9.9	-99.9	113	2.6
54.00	9999.99	16208	999.9	-9.9	-99.9	100	3.1
[illegible]5.00	9999.99	16541	999.9	-9.9	-99.9	107	3.1
[illegible]5.06	100.00	16574	-73.4	-9.9	-99.9	109	3.1
56.00	9999.99	16852	999.9	-9.9	-99.9	128	3.6
56.30	92.90	17007	-71.4	-9.9	-99.9	123	3.1
57.00	9999.99	17168	999.9	-9.9	-99.9	118	2.6
57.54	86.10	17457	-70.9	-9.9	-99.9	77	1.5

TALLAHASSEE, FLORIDA 9-28-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
58.00	9999.99	17491	999.9	-9.9	-99.9	72	1.5
58.36	82.70	17696	-69.8	-9.9	-99.9	51	2.6
59.00	9999.99	17795	999.9	-9.9	-99.9	41	3.1
59.06	81.00	17820	-70.1	-9.9	-99.9	41	3.1
60.00	9999.99	18037	999.9	-9.9	-99.9	37	5.1
60.54	75.30	18255	-69.1	-9.9	-99.9	47	6.2
61.00	9999.99	18279	999.9	-9.9	-99.9	48	6.2
62.00	9999.99	18516	999.9	-9.9	-99.9	62	6.2
62.06	71.80	18540	-67.3	-9.9	-99.9	62	6.2
62.54	70.00	18694	-65.3	-9.9	-99.9	65	6.2
63.00	9999.99	18710	999.9	-9.9	-99.9	65	6.2
64.00	9999.99	18874	999.9	-9.9	-99.9	74	6.7
64.06	67.80	18890	-63.5	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-29-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAP TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1009.80	18	27.4	7.0	65.0	320	3.1
.18	1000.00	105	26.6	5.8	69.8	328	4.6
.36	990.30	191	26.4	6.6	66.5	335	6.7
1.00	9999.99	302	999.9	-9.9	-99.9	345	8.7
1.30	962.60	441	24.2	5.8	69.7	349	8.7
2.00	9999.99	586	999.9	-9.9	-99.9	353	8.2
2.42	925.00	789	21.0	2.2	87.1	360	7.7
3.00	9999.99	864	999.9	-9.9	-99.9	3	7.7
3.24	906.40	965	19.7	1.8	89.6	5	7.7
3.36	900.70	1020	19.4	3.1	81.9	5	7.2
3.48	895.00	1075	18.9	2.2	87.3	6	7.2
4.00	9999.99	1130	999.9	-9.9	-99.9	7	7.2
4.12	883.60	1185	18.8	5.0	72.5	6	7.2
5.00	9999.99	1406	999.9	-9.9	-99.9	2	7.7
5.24	850.00	1517	16.7	5.3	70.7	2	7.7
6.00	9999.99	1680	999.9	-9.9	-99.9	1	7.2
6.18	826.00	1762	15.1	2.3	86.2	1	6.7
6.42	816.00	1865	14.7	4.6	73.8	2	6.7
7.00	9999.99	1945	999.9	-9.9	-99.9	2	6.2
7.12	803.30	1998	13.9	3.3	80.3	2	6.2
7.24	798.10	2053	13.7	5.1	70.8	1	6.2
8.00	9999.99	2215	999.9	-9.9	-99.9	360	5.7
9.00	9999.99	2484	999.9	-9.9	-99.9	342	5.7
9.42	741.20	2673	10.1	4.0	75.8	331	5.1
10.00	9999.99	2758	999.9	-9.9	-99.9	326	5.1
10.30	721.40	2899	9.0	5.3	69.1	328	5.1
10.48	713.80	2986	8.7	4.4	73.6	328	4.6
11.00	9999.99	3040	999.9	-9.9	-99.9	329	4.6
11.24	700.00	3148	7.5	6.1	64.8	333	4.6
12.00	9999.99	3316	999.9	-9.9	-99.9	339	4.1
12.06	683.50	3344	6.4	2.4	84.5	340	4.1
12.36	672.00	3484	5.9	3.5	77.9	347	3.6
13.00	9999.99	3597	999.9	-9.9	-99.9	352	3.1
13.12	658.30	3653	5.2	2.9	81.8	352	3.1
14.00	9999.99	3869	999.9	-9.9	-99.9	352	3.1
14.54	622.30	4111	2.3	3.1	80.1	339	4.6
15.00	9999.99	4138	999.9	-9.9	-99.9	338	4.6
15.54	602.00	4378	.1	1.0	93.5	343	5.7
16.00	9999.99	4406	999.9	-9.9	-99.9	344	5.7
16.30	589.40	4548	-.6	1.0	92.9	352	5.1
16.48	583.30	4631	.0	1.9	87.1	356	5.1
17.00	9999.99	4687	999.9	-9.9	-99.9	359	5.1
18.00	9999.99	4965	999.9	-9.9	-99.9	11	4.6
18.06	557.50	4993	-2.5	2.0	86.5	11	4.6
18.54	541.90	5218	-3.2	3.0	79.5	8	4.1
19.00	9999.99	5247	999.9	-9.9	-99.9	8	4.1
19.06	538.00	5275	-3.3	6.0	63.1	6	4.1
20.00	9999.99	5534	999.9	-9.9	-99.9	351	2.6
20.48	505.60	5764	-6.5	6.2	61.1	346	2.6
20.54	503.80	5792	-6.5	6.3	60.6	346	2.6
21.00	502.00	5820	-6.4	9.0	49.2	345	2.6
21.06	500.00	5851	-6.3	7.7	54.5	345	2.6
22.00	9999.99	6122	999.9	-9.9	-99.9	346	2.1
22.06	481.10	6152	-8.2	7.8	53.4	347	2.1

TALLAHASSEE, FLORIDA 9-29-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

E. P TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
22.18	477.40	6212	-8.7	6.2	60.7	349	2.1
22.48	468.00	6366	-9.7	8.2	51.2	353	2.1
23.00	9999.99	6425	999.9	-9.9	-99.9	355	2.1
23.24	457.30	6544	-10.5	18.6	20.1	358	2.6
23.42	451.90	6635	-10.8	30.0	20.0	360	2.6
24.00	9999.99	6722	999.9	-9.9	-99.9	2	3.1
25.00	9999.99	7011	999.9	-9.9	-99.9	8	2.1
26.00	9999.99	7301	999.9	-9.9	-99.9	0	.0
26.54	400.00	7561	-17.9	13.9	28.6	219	1.0
27.00	9999.99	7589	999.9	-9.9	-99.9	204	1.0
28.00	9999.99	7867	999.9	-9.9	-99.9	208	2.1
29.00	9999.99	8145	999.9	-9.9	-99.9	203	3.6
29.06	368.30	8173	-21.8	14.6	25.4	204	3.6
29.24	364.20	8256	-22.3	13.0	29.7	205	4.6
30.00	9999.99	8409	999.9	-9.9	-99.9	208	5.7
30.06	355.40	8435	-22.9	15.8	21.9	209	5.7
31.00	9999.99	8709	999.9	-9.9	-99.9	219	7.2
32.00	9999.99	9014	999.9	-9.9	-99.9	223	8.2
33.00	9999.99	9318	999.9	-9.9	-99.9	216	10.3
34.00	9999.99	9623	999.9	-9.9	-99.9	210	11.8
34.06	300.00	9653	-32.7	10.9	32.6	210	11.8
35.00	9999.99	9908	999.9	-9.9	-99.9	209	11.3
36.00	9999.99	10192	999.9	-9.9	-99.9	215	10.3
36.06	276.60	10220	-37.3	10.3	33.1	217	10.3
37.00	9999.99	10476	999.9	-9.9	-99.9	233	10.3
37.12	264.30	10533	-39.9	7.8	42.8	236	10.8
38.00	9999.99	10748	999.9	-9.9	-99.9	246	11.8
38.36	250.00	10910	-43.0	-9.9	-99.9	247	11.8
39.00	9999.99	11025	999.9	-9.9	-99.9	248	11.8
40.00	9999.99	11312	999.9	-9.9	-99.9	251	11.8
41.00	9999.99	11598	999.9	-9.9	-99.9	248	11.8
42.00	9999.99	11885	999.9	-9.9	-99.9	249	11.8
43.00	9999.99	12172	999.9	-9.9	-99.9	254	13.9
43.42	200.00	12373	-55.8	-9.9	-99.9	255	14.4
44.00	9999.99	12457	999.9	-9.9	-99.9	256	14.9
45.00	9999.99	12738	999.9	-9.9	-99.9	258	14.9
45.30	184.60	12878	-60.1	-9.9	-99.9	259	14.4
46.00	9999.99	13019	999.9	-9.9	-99.9	260	13.9
47.00	9999.99	13301	999.9	-9.9	-99.9	266	12.3
48.00	9999.99	13582	999.9	-9.9	-99.9	265	9.8
49.00	9999.99	13864	999.9	-9.9	-99.9	246	7.2
50.00	150.00	14146	-69.1	-9.9	-99.9	237	6.2
51.00	9999.99	14427	999.9	-9.9	-99.9	228	6.2
52.00	9999.99	14708	999.9	-9.9	-99.9	231	5.7
53.00	9999.99	14990	999.9	-9.9	-99.9	230	5.7
53.18	128.20	15074	-73.5	-9.9	-99.9	234	6.2
54.00	124.10	15265	-72.4	-9.9	-99.9	242	6.7
55.00	118.20	15550	-74.0	-9.9	-99.9	255	6.7
.36	114.80	15721	-73.1	-9.9	-99.9	256	6.2
[illegible].00	9999.99	15831	999.9	-9.9	-99.9	257	6.2
57.00	107.50	16105	-73.3	-9.9	-99.9	263	5.7
57.30	104.90	16249	-72.5	-9.9	-99.9	260	4.6
57.48	103.40	16334	-71.2	-9.9	-99.9	259	4.1
58.00	9999.99	16391	999.9	-9.9	-99.9	258	3.6

TALLAHASSEE, FLORIDA 9-29-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

E P TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
58.30	100.00	16532	-71.1	-9.9	-99.9	242	3.6
59.00	9999.99	16687	999.9	-9.9	-99.9	224	3.1
59.06	96.90	16718	-71.9	-9.9	-99.9	223	3.1
59.42	93.80	16909	-71.8	-9.9	-99.9	216	3.1
60.00	9999.99	16995	999.9	-9.9	-99.9	213	3.1
60.36	89.80	17167	-70.3	-9.9	-99.9	214	3.6
61.00	9999.99	17283	999.9	-9.9	-99.9	214	3.6
61.54	84.30	17544	-69.4	-9.9	-99.9	233	3.1
62.00	9999.99	17573	999.9	-9.9	-99.9	235	3.1
63.00	9999.99	17865	999.9	-9.9	-99.9	271	1.5
63.18	78.70	17953	-70.2	-9.9	-99.9	281	1.5
64.00	9999.99	18155	999.9	-9.9	-99.9	305	1.5
65.00	9999.99	18444	999.9	-9.9	-99.9	253	1.0
65.12	71.80	18502	-67.5	-9.9	-99.9	250	1.0
65.42	70.00	18656	-66.1	-9.9	-99.9	241	1.5
66.00	9999.99	18737	999.9	-9.9	-99.9	236	2.1
67.00	66.10	19007	-62.1	-9.9	-99.9	259	3.1
68.00	9999.99	19321	999.9	-9.9	-99.9	269	3.6
68.06	62.50	19352	-63.5	-9.9	-99.9	272	3.6
69.00	9999.99	19634	999.9	-9.9	-99.9	302	3.6
70.00	9999.99	19948	999.9	-9.9	-99.9	343	3.1
71.00	9999.99	20262	999.9	-9.9	-99.9	21	2.1
72.00	9999.99	20575	999.9	-9.9	-99.9	67	2.6
72.30	50.00	20732	-60.4	-9.9	-99.9	85	2.6
73.00	9999.99	20894	999.9	-9.9	-99.9	104	3.1
74.00	9999.99	21217	999.9	-9.9	-99.9	147	3.6
75.00	9999.99	21541	999.9	-9.9	-99.9	179	4.1
75.42	42.40	21767	-57.2	-9.9	-99.9	192	3.6
76.00	9999.99	21863	999.9	-9.9	-99.9	198	3.6
77.00	9999.99	22184	999.9	-9.9	-99.9	198	3.1
78.00	9999.99	22505	999.9	-9.9	-99.9	207	2.1
78.42	36.40	22729	-59.0	-9.9	-99.9	148	1.5
79.00	9999.99	22828	999.9	-9.9	-99.9	122	1.0
80.00	9999.99	23158	999.9	-9.9	-99.9	95	1.5
81.00	9999.99	23489	999.9	-9.9	-99.9	61	1.5
62.00	9999.99	23819	999.9	-9.9	-99.9	64	1.5
82.24	30.00	23951	-55.6	-9.9	-99.9	82	2.1
83.00	9999.99	24150	999.9	-9.9	-99.9	110	2.6
84.00	9999.99	24482	999.9	-9.9	-99.9	143	4.1
84.18	27.20	24582	-51.3	-9.9	-99.9	146	4.6
85.00	9999.99	24868	999.9	-9.9	-99.9	155	5.7
86.00	9999.99	25257	999.9	-9.9	-99.9	155	6.7
87.00	9999.99	25653	999.9	-9.9	-99.9	160	6.7
87.06	22.90	25693	-54.1	-9.9	-99.9	158	6.2
88.00	9999.99	26001	999.9	-9.9	-99.9	146	4.1
88.12	21.60	26070	-52.4	-9.9	-99.9	141	4.1
88.54	20.70	26347	-49.6	-9.9	-99.9	122	4.1
89.00	9999.99	26385	999.9	-9.9	-99.9	119	4.1
89.30	20.00	26572	-49.5	-9.9	-99.9	110	4.6
90.00	9999.99	26738	999.9	-9.9	-99.9	102	4.6
90.12	19.30	26805	-50.6	-9.9	-99.9	100	4.6
91.00	9999.99	27106	999.9	-9.9	-99.9	92	5.7
92.00	9999.99	27483	999.9	-9.9	-99.9	103	6.7
92.18	17.10	27596	-49.5	-9.9	-99.9	106	6.7

TALLAHASSEE, FLORIDA 9-29-1992 PRELIMINARY
RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 00 Z

ELAPSED TIME (M/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
93.00	9999.99	27845	999.9	-9.9	-99.9	114	7.2
93.18	16.20	27952	-47.3	-9.9	-99.9	119	7.2
94.00	9999.99	28220	999.9	-9.9	-99.9	130	7.2
95.00	9999.99	28603	999.9	-9.9	-99.9	129	6.7
96.00	9999.99	28985	999.9	-9.9	-99.9	142	6.7
97.00	13.10	29368	-44.0	-9.9	-99.9	163	7.7
98.00	9999.99	29811	999.9	-9.9	-99.9	179	6.2
98.12	12.10	29899	-46.3	-9.9	-99.9	183	6.2
99.00	9999.99	30210	999.9	-9.9	-99.9	196	6.7
100.00	9999.99	30599	999.9	-9.9	-99.9	211	7.2
101.00	9999.99	30988	999.9	-9.9	-99.9	235	5.1
101.30	10.00	31182	-40.8	-9.9	-99.9	999	999.9
102.00	9.70	31389	-41.3	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

TALLAHASSEE, FLORIDA 9-29-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL. TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
.00	1010.60	.8	21.3	.7	96.0	20	3.1
.18	1000.00	110	21.6	.8	95.1	24	5.7
1.00	9999.99	293	999.9	-9.9	-99.9	31	10.8
1.06	976.20	319	20.2	.7	95.6	32	10.8
1.24	967.40	398	22.5	2.9	83.8	36	10.3
1.30	964.40	425	22.5	3.7	79.3	37	10.3
1.48	955.40	507	22.1	5.3	71.6	41	9.8
2.00	9999.99	558	999.9	-9.9	-99.9	44	9.8
2.54	925.00	788	20.2	4.0	77.7	42	8.2
3.00	9999.99	817	999.9	-9.9	-99.9	42	8.2
3.24	909.80	931	19.1	3.8	78.2	40	8.2
3.54	896.10	1062	18.8	8.1	58.9	37	7.7
4.00	9999.99	1088	999.9	-9.9	-99.9	37	7.7
4.12	888.10	1139	18.9	17.7	30.9	36	7.7
4.30	880.00	1217	19.0	22.0	22.5	36	7.7
4.48	872.10	1294	18.3	21.7	22.8	35	7.7
5.00	866.60	1349	17.8	7.0	63.3	34	7.7
5.42	850.00	1514	16.4	5.5	69.7	30	7.7
6.00	9999.99	1608	999.9	-9.9	-99.9	28	7.7
6.12	835.80	1657	16.1	13.3	41.2	26	7.7
6.54	818.30	1837	15.0	11.3	46.7	21	7.2
7.00	9999.99	1864	999.9	-9.9	-99.9	20	7.2
7.18	808.10	1943	14.1	3.7	78.1	17	7.2
3.00	9999.99	2127	999.9	-9.9	-99.9	9	7.2
9.00	766.50	2389	12.0	5.6	68.2	359	6.2
9.48	747.40	2600	10.5	2.9	82.1	357	5.7
9.54	745.00	2627	10.3	2.4	85.2	357	5.7
10.00	9999.99	2654	999.9	-9.9	-99.9	357	5.7
10.06	740.20	2681	10.2	4.0	76.0	357	5.7
10.24	732.60	2767	10.4	10.9	46.8	358	5.7
10.30	730.20	2794	10.3	7.9	57.9	358	5.1
10.42	725.60	2847	9.9	7.0	61.5	358	5.1
11.00	9999.99	2928	999.9	-9.9	-99.9	359	5.1
11.48	700.00	3145	7.9	5.2	69.6	357	4.1
12.00	9999.99	3200	999.9	-9.9	-99.9	356	3.6
13.00	9999.99	3473	999.9	-9.9	-99.9	345	2.6
13.24	663.80	3582	5.6	5.3	68.7	341	2.6
14.00	650.50	3747	5.1	6.7	61.7	335	3.1
14.06	648.30	3775	5.1	8.8	53.1	333	3.1
15.00	628.60	4026	3.4	5.8	65.6	312	3.1
15.18	622.80	4102	2.9	6.8	60.8	308	3.1
15.30	618.60	4156	2.6	8.0	55.4	304	3.1
15.36	616.40	4185	2.6	11.4	43.0	303	3.6
15.42	614.20	4214	2.9	30.0	20.0	301	3.6
15.48	612.00	4243	3.1	30.0	20.0	299	3.6
15.54	609.90	4271	3.0	14.2	34.9	298	3.6
16.00	607.90	4298	2.8	11.6	42.4	296	3.6
16.30	597.60	4436	1.6	12.3	39.8	306	4.1
.42	593.40	4493	1.3	11.5	42.4	310	4.1
.54	589.10	4551	1.0	19.8	21.2	314	4.6
17.00	9999.99	4581	999.9	-9.9	-99.9	316	4.6
17.06	584.80	4610	.9	30.0	20.0	319	4.6
17.48	570.60	4807	.1	30.0	20.0	337	5.1
18.00	9999.99	4865	999.9	-9.9	-99.9	342	5.1

TALLAHASSEE, FLORIDA 9-29-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL'D TIME (M. ./SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
19.00	9999.99	5158	999.9	-9.9	-99.9	356	4.6
19.12	542.10	5216	-2.0	30.0	20.0	357	4.6
20.00	9999.99	5448	999.9	-9.9	-99.9	2	4.1
21.00	9999.99	5737	999.9	-9.9	-99.9	1	4.6
21.24	500.00	5853	-6.5	30.0	20.0	356	4.1
22.00	9999.99	6030	999.9	-9.9	-99.9	349	3.6
22.18	483.30	6118	-8.5	30.0	20.0	342	3.6
23.00	9999.99	6320	999.9	-9.9	-99.9	326	4.1
24.00	9999.99	6608	999.9	-9.9	-99.9	312	3.6
25.00	9999.99	6896	999.9	-9.9	-99.9	270	3.6
25.36	427.00	7069	-13.6	30.0	20.0	258	5.7
26.00	9999.99	7189	999.9	-9.9	-99.9	250	6.7
26.12	417.00	7249	-14.8	30.0	20.0	249	7.2
27.00	9999.99	7499	999.9	-9.9	-99.9	246	9.3
27.12	400.00	7562	-17.2	4.3	68.9	246	9.8
27.48	390.70	7739	-18.6	3.2	75.9	246	10.3
28.00	9999.99	7801	999.9	-9.9	-99.9	246	10.8
28.12	384.30	7862	-19.1	3.4	74.2	246	10.8
28.30	379.80	7949	-19.0	7.2	53.1	246	10.8
29.00	9999.99	8110	999.9	-9.9	-99.9	246	11.3
29.06	370.10	8142	-19.7	11.3	36.3	246	11.3
30.00	9999.99	8426	999.9	-9.9	-99.9	246	12.9
30.54	342.60	8710	-24.5	9.1	42.6	246	14.9
[illegible].00	9999.99	8740	999.9	-9.9	-99.9	246	14.9
[illegible]1.48	330.00	8982	-25.9	12.9	28.7	244	15.9
32.00	9999.99	9041	999.9	-9.9	-99.9	244	15.9
33.00	9999.99	9338	999.9	-9.9	-99.9	241	15.4
34.00	9999.99	9635	999.9	-9.9	-99.9	238	14.9
34.06	300.00	9665	-31.5	12.3	28.3	238	14.9
35.00	9999.99	9916	999.9	-9.9	-99.9	238	15.9
35.30	283.80	10055	-34.6	14.3	21.4	239	15.9
36.00	9999.99	10207	999.9	-9.9	-99.9	241	16.5
36.42	269.30	10419	-38.0	14.0	20.9	247	17.0
37.00	9999.99	10512	999.9	-9.9	-99.9	249	17.0
37.18	262.10	10605	-39.8	12.7	23.8	252	17.0
38.00	9999.99	10809	999.9	-9.9	-99.9	260	17.5
38.24	250.00	10926	-42.5	-9.9	-99.9	262	17.5
39.00	9999.99	11096	999.9	-9.9	-99.9	265	18.0
40.00	9999.99	11378	999.9	-9.9	-99.9	264	17.5
41.00	9999.99	11661	999.9	-9.9	-99.9	259	15.9
42.00	9999.99	11943	999.9	-9.9	-99.9	252	15.4
43.00	9999.99	12226	999.9	-9.9	-99.9	245	14.4
43.36	200.00	12395	-54.4	-9.9	-99.9	241	13.9
44.00	9999.99	12509	999.9	-9.9	-99.9	239	13.4
44.42	190.40	12708	-57.4	-9.9	-99.9	235	12.9
45.00	9999.99	12784	999.9	-9.9	-99.9	233	12.3
46.00	9999.99	13035	999.9	-9.9	-99.9	228	12.3
46.48	175.00	13237	-60.9	-9.9	-99.9	222	11.8
4[illegible].00	9999.99	13292	999.9	-9.9	-99.9	221	11.8
4[illegible]00	9999.99	13569	999.9	-9.9	-99.9	215	11.8
49.00	9999.99	13847	999.9	-9.9	-99.9	211	12.9
50.00	9999.99	14124	999.9	-9.9	-99.9	225	13.9
50.12	150.00	14179	-67.8	-9.9	-99.9	228	13.9
51.00	9999.99	14410	999.9	-9.9	-99.9	239	14.4

TALLAHASSEE, FLORIDA 9-29-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL(TIME (MIn/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
51.24	141.60	14526	-68.1	-9.9	-99.9	246	14.4
52.00	137.40	14706	-69.1	-9.9	-99.9	258	14.9
53.00	9999.99	14982	599.9	-9.9	-99.9	270	14.9
53.18	129.40	15065	-68.5	-9.9	-99.9	272	14.9
54.00	9999.99	15266	999.9	-9.9	-99.9	277	14.4
54.12	123.90	15324	-70.4	-9.9	-99.9	278	13.9
54.42	121.10	15460	-69.7	-9.9	-99.9	279	13.4
55.00	9999.99	15544	999.9	-9.9	-99.9	280	12.9
56.00	9999.99	15825	999.9	-9.9	-99.9	279	11.3
56.54	109.10	16077	-73.2	-9.9	-99.9	277	9.3
57.00	9999.99	16108	999.9	-9.9	-99.9	277	9.3
57.48	104.10	16353	-71.6	-9.9	-99.9	276	7.7
58.00	9999.99	16412	999.9	-9.9	-99.9	276	7.2
58.36	100.00	16589	-72.8	-9.9	-99.9	278	6.7
59.00	9999.99	16696	999.9	-9.9	-99.9	279	6.7
60.00	9999.99	16962	999.9	-9.9	-99.9	284	5.7
60.12	93.00	17015	-72.8	-9.9	-99.9	285	5.7
61.00	9999.99	17230	999.9	-9.9	-99.9	290	5.1
61.42	86.90	17418	-68.4	-9.9	-99.9	288	4.1
62.00	9999.99	17502	999.9	-9.9	-99.9	287	3.6
62.18	84.50	17585	-68.8	-9.9	-99.9	278	3.1
62.54	82.20	17751	-66.9	-9.9	-99.9	261	2.6
63.00	9999.99	17777	999.9	-9.9	-99.9	258	2.6
3.36	79.80	17931	-66.1	-9.9	-99.9	253	3.1
64.00	9999.99	18029	999.9	-9.9	-99.9	249	3.1
64.06	78.20	18053	-66.4	-9.9	-99.9	250	3.1
64.42	76.20	18211	-64.8	-9.9	-99.9	260	2.6
65.00	9999.99	18298	999.9	-9.9	-99.9	265	2.6
66.00	9999.99	18587	999.9	-9.9	-99.9	287	2.6
66.30	70.00	18731	-63.3	-9.9	-99.9	276	1.5
67.00	9999.99	18881	999.9	-9.9	-99.9	265	.5
68.00	9999.99	19182	999.9	-9.9	-99.9	175	1.5
68.48	62.60	19422	-60.8	-9.9	-99.9	188	2.6
69.00	9999.99	19481	999.9	-9.9	-99.9	191	2.6
70.00	9999.99	19776	999.9	-9.9	-99.9	202	3.1
71.00	9999.99	20072	999.9	-9.9	-99.9	237	3.1
71.36	54.80	20249	-61.2	-9.9	-99.9	248	2.6
72.00	9999.99	20359	999.9	-9.9	-99.9	255	2.6
72.42	52.20	20552	-58.3	-9.9	-99.9	290	1.5
73.00	9999.99	20634	999.9	-9.9	-99.9	305	1.0
73.42	50.00	20824	-57.5	-9.9	-99.9	353	1.0
74.00	9999.99	20909	999.9	-9.9	-99.9	15	1.0
74.12	48.90	20965	-55.8	-9.9	-99.9	21	1.5
75.00	9999.99	21206	999.9	-9.9	-99.9	45	4.1
76.00	9999.99	21508	999.9	-9.9	-99.9	62	5.1
77.00	9999.99	21809	999.9	-9.9	-99.9	87	4.6
77.36	41.60	21990	-57.6	-9.9	-99.9	94	4.6
78.00	9999.99	22113	999.9	-9.9	-99.9	98	4.6
.00	9999.99	22422	999.9	-9.9	-99.9	121	4.6
0.00	9999.99	22730	999.9	-9.9	-99.9	135	3.6
81.00	9999.99	23038	999.9	-9.9	-99.9	139	4.1
82.00	9999.99	23346	999.9	-9.9	-99.9	138	4.1
82.48	32.40	23593	-50.8	-9.9	-99.9	140	4.1
83.00	9999.99	23664	999.9	-9.9	-99.9	141	4.1

TALLAHASSEE, FLORIDA 9-29-1992 PRELIMINARY

RADIOSONDE/RAWINSONDE OBSERVATION WBAN NO. 93805 TIME (GMT) 12 Z

EL TIME (MIN/SEC)	PRESSURE (MBS)	HEIGHT (M-MSL)	TEMP (DEG C)	DP DEPR (DEG C)	RH %	WIND DIR(DEG)	WIND SPD(M/S)
84.00	9999.99	24022	999.9	-9.9	-99.9	132	4.1
84.12	30.00	24093	-51.7	-9.9	-99.9	130	4.1
85.00	9999.99	24348	999.9	-9.9	-99.9	121	4.6
86.00	9999.99	24666	999.9	-9.9	-99.9	106	3.1
86.54	26.30	24952	-49.1	-9.9	-99.9	56	2.6
87.00	9999.99	24985	999.9	-9.9	-99.9	50	2.6
88.00	9999.99	25317	999.9	-9.9	-99.9	27	2.6
89.00	9999.99	25650	999.9	-9.9	-99.9	13	1.5
89.12	23.40	25716	-50.7	-9.9	-99.9	20	1.5
90.00	9999.99	25982	999.9	-9.9	-99.9	48	.5
90.30	21.90	26149	-49.8	-9.9	-99.9	79	1.0
91.00	9999.99	26325	999.9	-9.9	-99.9	111	2.1
92.00	9999.99	26678	999.9	-9.9	-99.9	93	2.6
92.12	20.00	26748	-46.0	-9.9	-99.9	89	2.6
93.00	9999.99	27028	999.9	-9.9	-99.9	73	3.6
94.00	9999.99	27379	999.9	-9.9	-99.9	80	4.1
94.06	18.10	27414	-45.1	-9.9	-99.9	82	4.1
95.00	9999.99	27748	999.9	-9.9	-99.9	100	6.2
96.00	9999.99	28120	999.9	-9.9	-99.9	112	6.7
96.18	16.00	28231	-48.7	-9.9	-99.9	113	7.2
97.00	9999.99	28529	999.9	-9.9	-99.9	117	7.7
97.06	15.20	28571	-45.8	-9.9	-99.9	999	999.9

END OF AVAILABLE PRELIMINARY DATA

APPENDIX C

LOWTRAN 7 INPUT AND OUTPUT FILES

Mode of Execution	LOWTRAN
˘ ˘ıdel Atmosphere	New Model Atmosphere
Type of Atmospheric Path	Slant Path
Mode of Execution	Transmittance
Executed With Multiple Scattering	Yes
Temperature & Pressure Altitude Profile	New Model Atmosphere
Water Vapor Altitude Profile	New Model Atmosphere
Ozone Altitude Profile	New Model Atmosphere
Methane Altitude Profile	New Model Atmosphere
Nitrous Oxide Altitude Profile	New Model Atmosphere
Carbon Monoxide Altitude Profile	New Model Atmosphere
Other Gases Altitude Profile	New Model Atmosphere
Radiosonde Data are to be Input	Yes
Output File Options	Include ATM Profiles
Temp at Boundary (.000 - T @ 1st level)	.000
Surface Albedo (.000 - Blackbody)	.0000

Run # 1 of 1 LOWTRAN Card 1 F10=Keys

Aerosol Model Used	No Aerosol Attenuation
ﾞeasonal Modifications to Aerosols	Fall-Winter
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Air Mass Character for Navy Maritime Aersols	0
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Use of Army (VSA) for Aerosol Extension	No
Surface Range for Boundary Layer	.002
Wind Speed-Navy Maritime Aerosols(m/s)	.000
24-Hr Ave Wind Speed-Navy Maritime(m/s)	.000
Rain Rate (mm/hr)	.000
Ground Altitude above Sea Level (km)	.002

Run # 1 of 1 LOWTRAN Card 2 F10=Keys

Initial Altitude (km) .002

Final Altitude/Tangent Height (km) .005

Initial Zenith Angle (degrees) 89.900

Path Length (km) 1.160

Earth Center Angle (degrees) .000

Radius of Earth (km) [.000 - default] .000

Type of Path Long

Initial Frequency 714.286 cm-1 Wavelength 3.000 Ìm

Final Frequency 3333.333 cm-1 Wavelength 14.000 Ìm

Frequency Increment (wavenumber) 10.000

Run # 1 of 1 LOWTRAN Cards 3 & 4 F10=Keys

Number of Plots 0

Hard Copy Option Printer Output

Foreground/Background Color Select 15

Interactive Graphics Mode 640X350 dot Mode

Run # 1 of 1 ONPLT Input F10=Keys

Number of Atmospheric Layers 17

S''pply Molecular Densities by Layer Yes

Supply Aerosol Information by Layer Yes

Title: ADAK 20FEB92 00:00 ZULU

Run # 1 of 1 LOWTRAN Card 2c

Boundary Altitude (km) Layer # 1 of 17	.005
Pressure	1007.900
P--ssure Option/Units	Units are (mb)
'. .perature	3.900
Temperature Option/Units	Units are (‡C)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	7.500E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km)	Layer # 2 of 17	.411		
essure		958.300		
ressure Option/Units		Units are (mb)		
Temperature		.000		
Temperature Option/Units		Units are (¿C)		

Mol	Density Option/Units	Mol	Density Option/Units
H2O	8.900E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km)	Layer # 3 of 17	.742		
Pressure		919.400		
Pressure Option/Units		Units are (mb)		
Temperature		-2.700		
Temperature Option/Units		Units are (¿C)		

Mol	Density Option/Units	Mol	Density Option/Units
H2O	9.300E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 4 of 17	.773
Pressure	915.800
Pressure Option/Units	Units are (mb)
Temperature	-2.700
Temperature Option/Units	Units are (ŧC)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	9.300E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 5 of 17	.951
Pressure	895.500
Pressure Option/Units	Units are (mb)
Temperature	-2.600
Temperature Option/Units	Units are (ŧC)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	7.100E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 6 of 17 1.050
Pressure 884.400
ssure Option/Units Units are (mb)
emperature -3.200
Temperature Option/Units Units are (łC)

Mol	Density	Option/Units	Mol	Density	Option/Units
H2O	6.900E+01	% Rel Humidity	CO2	.000E+00	Use SubArctic Winter
O3	.000E+00	Use SubArctic Winter	N2O	.000E+00	Use SubArctic Winter
CO	.000E+00	Use SubArctic Winter	CH4	.000E+00	Use SubArctic Winter
O2	.000E+00	Use SubArctic Winter	NO	.000E+00	Use SubArctic Winter
SO2	.000E+00	Use SubArctic Winter	NO2	.000E+00	Use SubArctic Winter
NH3	.000E+00	Use SubArctic Winter	HNO3	.000E+00	Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km) .000
Equivalent Liquid H2O Content (gm/m3) .000
Rain Rate (mm/hr) .000
Aerosol Model Used No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km) Background Stratospheric
Seasonal Modifications to Aerosols Determined by Model
Change Profile Region No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 7 of 17 1.218
Pressure 865.800
ssure Option/Units Units are (mb)
emperature -1.100
Temperature Option/Units Units are (łC)

Mol	Density	Option/Units	Mol	Density	Option/Units
H2O	4.000E+01	% Rel Humidity	CO2	.000E+00	Use SubArctic Winter
O3	.000E+00	Use SubArctic Winter	N2O	.000E+00	Use SubArctic Winter
CO	.000E+00	Use SubArctic Winter	CH4	.000E+00	Use SubArctic Winter
O2	.000E+00	Use SubArctic Winter	NO	.000E+00	Use SubArctic Winter
SO2	.000E+00	Use SubArctic Winter	NO2	.000E+00	Use SubArctic Winter
NH3	.000E+00	Use SubArctic Winter	HNO3	.000E+00	Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km) .000
Equivalent Liquid H2O Content (gm/m3) .000
Rain Rate (mm/hr) .000
Aerosol Model Used No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km) Background Stratospheric
Seasonal Modifications to Aerosols Determined by Model
Change Profile Region No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 8 of 17	1.319
essure	854.900
Pressure Option/Units	Units are (mb)
Temperature	-.800
Temperature Option/Units	Units are (łC)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	2.300E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 9 of 17	1.452
Pressure	840.800
Pressure Option/Units	Units are (mb)
Temperature	.000
Temperature Option/Units	Units are (łC)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	3.200E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 10 of 17	1.481
Pressure	837.700
r -ssure Option/Units	Units are (mb)
.nperature	.200
Temperature Option/Units	Units are (‡C)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	2.900E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Îm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 11 of 17	1.550
Pressure	830.600
r -ssure Option/Units	Units are (mb)
. .nperature	.000
Temperature Option/Units	Units are (‡C)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	2.800E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Îm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 12 of 17 1.626
P ssure 822.700
ssure Option/Units Units are (mb)
Temperature -.300
Temperature Option/Units Units are (¼C)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	3.700E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km) .000
Equivalent Liquid H2O Content (gm/m3) .000
Rain Rate (mm/hr) .000
Aerosol Model Used No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km) Background Stratospheric
Seasonal Modifications to Aerosols Determined by Model
Change Profile Region No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 13 of 17 1.875
essure 797.400
essure Option/Units Units are (mb)
Temperature -1.300
Temperature Option/Units Units are (¼C)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	1.200E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km) .000
Equivalent Liquid H2O Content (gm/m3) .000
Rain Rate (mm/hr) .000
Aerosol Model Used No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km) Background Stratospheric
Seasonal Modifications to Aerosols Determined by Model
Change Profile Region No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 14 of 17	2.103		
Pressure	775.000		
Pressure Option/Units	Units are (mb)		
Temperature	-2.000		
Temperature Option/Units	Units are (¼C)		

Mol	Density Option/Units	Mol	Density Option/Units
H2O	1.200E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain R; te (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 15 of 17	2.242
Pressure	761.500
Pressure Option/Units	Units are (mb)
Temperature	-3.000
Temperature Option/Units	Units are (¼C)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	3.600E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

undary Altitude (km) Layer # 16 of 17 2.471

ressure	739.700
Pressure Option/Units	Units are (mb)
Temperature	-5.100
Temperature Option/Units	Units are (¼C)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	5.500E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

Boundary Altitude (km) Layer # 17 of 17 3.055

Pressure	686.300
Pressure Option/Units	Units are (mb)
Temperature	-9.900
Temperature Option/Units	Units are (¼C)

Mol	Density Option/Units	Mol	Density Option/Units
H2O	7.000E+01 % Rel Humidity	CO2	.000E+00 Use SubArctic Winter
O3	.000E+00 Use SubArctic Winter	N2O	.000E+00 Use SubArctic Winter
CO	.000E+00 Use SubArctic Winter	CH4	.000E+00 Use SubArctic Winter
O2	.000E+00 Use SubArctic Winter	NO	.000E+00 Use SubArctic Winter
SO2	.000E+00 Use SubArctic Winter	NO2	.000E+00 Use SubArctic Winter
NH3	.000E+00 Use SubArctic Winter	HNO3	.000E+00 Use SubArctic Winter

Aerosol Extinction at 0.55 Ìm (1/km)	.000
Equivalent Liquid H2O Content (gm/m3)	.000
Rain Rate (mm/hr)	.000
Aerosol Model Used	No Aerosol Attenuation
Use Cloud/Rain Aerosol Extensions	No Clouds or Rain
Upper Atmosphere Aerosols (30-100 km)	Background Stratospheric
Seasonal Modifications to Aerosols	Determined by Model
Change Profile Region	No

Run # 1 of 1 LOWTRAN Cards 2c1 - 2c3 F10=Keys

```
1              ***** LOWTRAN 7 *****
0 CARD 1  *****    7   2   0   1   0   0   0   0   0   0   0   1   0   .000    .00
0 CARD 2  *****    0   2   0   0   0   0    .002     .000     .000     .000     .002
0  GNDALT =       .00
0 CARD 2C *****   17    1    1ADAK 20FEB92 00:00 Z

 MODEL ATMOSPHERE NO.    7 ICLD =    0

       MODEL 0 / 7 USER INPUT DATA

   .005 1.008E+03 3.900E+00 7.500E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
   .411 9.583E+02 0.000E+00 8.900E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
   .742 9.194E+02-2.700E+00 9.300E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
   .773 9.158E+02-2.700E+00 9.300E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
   .951 8.955E+02-2.600E+00 7.100E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
  1.050 8.844E+02-3.200E+00 6.900E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
  1.218 8.658E+02-1.100E+00 4.000E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
  1.319 8.549E+02-8.000E-01 2.300E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
  1.452 8.408E+02 0.000E+00 3.200E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
  1.481 8.377E+02 2.000E-01 2.900E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
  1.550 8.306E+02 0.000E+00 2.800E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 0.000E+00
         .000      .000      .000   0   0   0   0   0
  1.626 8.227E+02-3.000E-01 3.700E+01 0.000E+00 0.000E+00         ABH55555555555
 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
```

0.000E+00
.000 .000 .000 0 0 0 0 0
1.875 7.974E+02-1.300E+00 1.200E+01 0.000E+00 0.000E+00 ABH555555555555
0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
0.000E+00
.000 .000 .000 0 0 0 0 0
2.103 7.750E+02-2.000E+00 1.200E+01 0.000E+00 0.000E+00 ABH555555555555
0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
0.000E+00
.000 .000 .000 0 0 0 0 0
2.242 7.615E+02-3.000E+00 3.600E+01 0.000E+00 0.000E+00 ABH555555555555
0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
0.000E+00
.000 .000 .000 0 0 0 0 0
2.471 7.397E+02-5.100E+00 5.500E+01 0.000E+00 0.000E+00 ABH555555555555
0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
0.000E+00
.000 .000 .000 0 0 0 0 0
3.055 6.863E+02-9.900E+00 7.000E+01 0.000E+00 0.000E+00 ABH555555555555
0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
0.000E+00
.000 .000 .000 0 0 0 0 0

Z (KM)	P (MB)	T (K)	REL H (%)	H2O (GM M-3)	CLD AMT (GM M-3)	RAIN RATE (MM HR-1)	TYPE	AEROSOL PROFILE
.005	1007.900	277.05	74.94	4.732E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN NO
.411	958.300	273.15	88.93	4.310E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN NO
.742	919.400	270.45	92.92	3.730E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN NO
.773	915.800	270.45	92.92	3.730E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN NO
.951	895.500	270.55	70.94	2.868E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN NO
1.050	884.400	269.95	68.94	2.672E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
1.218	865.800	272.05	39.97	1.795E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
1.319	854.900	272.35	22.98	1.054E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
1.452	840.800	273.15	31.97	1.550E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
1.481	837.700	273.35	28.98	1.424E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
1.550	830.600	273.15	27.98	1.356E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
1.626	822.700	272.85	36.97	1.755E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
1.875	797.400	271.85	11.99	5.310E-01	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
2.103	775.000	271.15	11.99	5.057E-01	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
2.242	761.500	270.15	35.97	1.414E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
2.471	739.700	268.05	54.95	1.859E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N
3.055	686.300	263.25	69.94	1.662E+00	0.000E+00	0.000E+00	USER RAIN NO CLOUD	USER RAIN N

0 CARD 3 ***** .002 .005 89.900 1.160 .000 .000 1
H1 LESS THAN FIRST ALT RESET
H1 WAS .00 1ST ALT = .00
0 CARD 4 ***** 714.286 3333.333 10.000
0 PROGRAM WILL COMPUTE TRANSMITTANCE
0 MULTIPLE SCATTERING HAS BEEN TURNED OFF
0 ATMOSPHERIC MODEL
TEMPERATURE = 7 ADAK 20FEB92 00:00 Z
WATER VAPOR = 7 ADAK 20FEB92 00:00 Z
OZONE = 7 ADAK 20FEB92 00:00 Z
M4 = 0 M5 = 0 M6 = 0 MDEF = 0
0 SLANT PATH, H1 TO H2
H1 = .005 KM
H2 = .005 KM
ANGLE = 89.900 DEG
RANGE = 1.160 KM
BETA = .000 DEG

LEN = 1
0 FREQUENCY RANGE
V1 = 710.0 CM-1 (14.08 MICROMETERS)
V2 = 3330.0 CM-1 (3.00 MICROMETERS)
DV = 10.0 CM-1
1
ATMOSPHERIC PROFILES

I	Z (KM)	P (MB)	T (K)	N2	CNTMSLF (MOL/CM2 KM)	MOL SCAT (-)	N-1 (-)	O3 (UV) (ATM CM/KM)	O2 (UV) (ATM CM/KM)
1	.00	1007.900	277.0	7.565E-01	1.009E+20	9.807E-01	2.818E-04	1.768E-03	3.716E+04
2	.41	958.300	273.1	6.986E-01	8.372E+19	9.458E-01	2.718E-04	1.819E-03	3.526E+04
3	.74	919.400	270.4	6.527E-01	6.272E+19	9.164E-01	2.634E-04	1.841E-03	3.370E+04
4	.77	915.800	270.4	6.476E-01	6.272E+19	9.128E-01	2.624E-04	1.840E-03	3.351E+04
5	.95	895.500	270.5	6.188E-01	3.708E+19	8.923E-01	2.565E-04	1.837E-03	3.244E+04
6	1.05	884.400	269.9	6.056E-01	3.217E+19	8.832E-01	2.539E-04	1.839E-03	3.197E+04
7	1.22	865.800	272.0	5.737E-01	1.452E+19	8.579E-01	2.467E-04	1.821E-03	3.068E+04
8	1.32	854.900	272.4	5.584E-01	5.005E+18	8.462E-01	2.433E-04	1.817E-03	3.009E+04
9	1.45	840.800	273.1	5.378E-01	1.082E+19	8.298E-01	2.386E-04	1.809E-03	2.927E+04
10	1.48	837.700	273.4	5.332E-01	9.138E+18	8.261E-01	2.376E-04	1.807E-03	2.909E+04
11	1.55	830.600	273.1	5.248E-01	8.287E+18	8.197E-01	2.357E-04	1.808E-03	2.877E+04
12	1.63	822.700	272.9	5.157E-01	1.388E+19	8.128E-01	2.337E-04	1.809E-03	2.843E+04
13	1.88	797.400	271.9	4.872E-01	1.271E+18	7.907E-01	2.274E-04	1.815E-03	2.735E+04
14	2.10	775.000	271.1	4.620E-01	1.152E+18	7.705E-01	2.216E-04	1.828E-03	2.638E+04
15	2.24	761.500	270.1	4.485E-01	9.009E+18	7.599E-01	2.185E-04	1.845E-03	2.588E+04
16	2.47	739.700	268.0	4.282E-01	1.558E+19	7.439E-01	2.139E-04	1.877E-03	2.513E+04
17	3.06	686.300	263.3	3.787E-01	1.246E+19	7.028E-01	2.021E-04	1.961E-03	2.324E+04

1
ATMOSPHERIC PROFILES

I	Z (KM)	P (MB)	T (K)	CNTMFRN MOL/CM2 KM	HNO3 ATM CM/KM	AEROSOL 1 (-)	AEROSOL 2 (-)	AEROSOL 3 (-)	AEROSOL 4 (-)	AE (-)
1	.00	1007.900	277.0	1.671E+22	4.908E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000
2	.41	958.300	273.1	1.468E+22	5.101E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000
3	.74	919.400	270.4	1.232E+22	5.234E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000
4	.77	915.800	270.4	1.227E+22	5.241E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000
5	.95	895.500	270.5	9.234E+21	5.276E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000
6	1.05	884.400	269.9	8.515E+21	5.306E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000
7	1.22	865.800	272.0	5.564E+21	5.294E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000
8	1.32	854.900	272.4	3.225E+21	5.304E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.00
9	1.45	840.800	273.1	4.647E+21	5.308E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.00
10	1.48	837.700	273.4	4.252E+21	5.308E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.00
11	1.55	830.600	273.1	4.018E+21	5.322E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.00
12	1.63	822.700	272.9	5.154E+21	5.337E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.00
13	1.88	797.400	271.9	1.520E+21	5.383E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.00
14	2.10	775.000	271.1	1.410E+21	5.417E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0
15	2.24	761.500	270.1	3.883E+21	5.446E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0
16	2.47	739.700	268.0	4.995E+21	5.499E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0
17	3.06	686.300	263.3	4.220E+21	5.597E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0

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ATMOSPHERIC PROFILES

(IF A MOLECULE HAS MORE THAN ONE BAND, THEN THE DATA FOR THE FIRST BAND ARE

I	Z (KM)	P (MB)	T (K)	H2O G/CM**2/KM	O3 (	CO2	CO	CH4 ATM CM/KM	N2O	O2	NH3	NO
1	.00	1007.900	277.0	4.69E-01	1.73E-03	3.33E+01	1.45E-02	1.67E-01	3.09E-02	1.95E+04	4.94E-05	
2	.41	958.300	273.1	4.08E-01	1.78E-03	3.00E+01	1.34E-02	1.54E-01	2.96E-02	1.85E+04	4.55E-05	

3	.74	919.400	270.4	3.40E-01	1.79E-03	2.77E+01	1.25E-02	1.45E-01	2.85E-02	1.76E+04	4.22E-05	2.60E-05
4	.77	915.800	270.4	3.39E-01	1.79E-03	2.75E+01	1.24E-02	1.44E-01	2.84E-02	1.74E+04	4.19E-05	2.58E-05
5	.95	895.500	270.5	2.55E-01	1.77E-03	2.65E+01	1.19E-02	1.38E-01	2.75E-02	1.66E+04	4.01E-05	2.50E-05
6	1.05	884.400	269.9	2.35E-01	1.77E-03	2.59E+01	1.16E-02	1.35E-01	2.71E-02	1.63E+04	3.91E-05	2.45E-05
7	1.22	865.800	272.0	1.54E-01	1.71E-03	2.52E+01	1.10E-02	1.30E-01	2.59E-02	1.50E+04	3.73E-05	2.36E-05
8	1.32	854.900	272.4	8.93E-02	1.70E-03	2.47E+01	1.07E-02	1.27E-01	2.54E-02	1.46E+04	3.63E-05	2.32E-05
9	1.45	840.800	273.1	1.29E-01	1.67E-03	2.41E+01	1.03E-02	1.23E-01	2.47E-02	1.39E+04	3.49E-05	2.25E-05
10	1.48	837.700	273.4	1.18E-01	1.67E-03	2.40E+01	1.02E-02	1.23E-01	2.46E-02	1.37E+04	3.46E-05	2.24E-05
11	1.55	830.600	273.1	1.12E-01	1.66E-03	2.37E+01	1.00E-02	1.21E-01	2.43E-02	1.35E+04	3.39E-05	2.21E-05
12	1.63	822.700	272.9	1.43E-01	1.66E-03	2.33E+01	9.84E-03	1.19E-01	2.40E-02	1.33E+04	3.31E-05	2.18E-05
13	1.88	797.400	271.9	4.20E-02	1.65E-03	2.20E+01	9.29E-03	1.13E-01	2.32E-02	1.26E+04	3.05E-05	2.09E-05
14	2.10	775.000	271.1	3.90E-02	1.65E-03	2.09E+01	8.80E-03	1.08E-01	2.24E-02	1.20E+04	2.81E-05	2.00E-05
15	2.24	761.500	270.1	1.07E-01	1.66E-03	2.02E+01	8.54E-03	1.05E-01	2.20E-02	1.17E+04	2.66E-05	1.95E-05
16	2.47	739.700	268.0	1.37E-01	1.69E-03	1.90E+01	8.15E-03	1.00E-01	2.15E-02	1.13E+04	2.43E-05	1.87E-05
17	3.06	686.300	263.3	1.15E-01	1.75E-03	1.64E+01	7.22E-03	8.90E-02	2.01E-02	1.03E+04	1.86E-05	1.69E-05

CASE 2B:, GIVEN H1, ANGLE, RANGE

NOTE: H2 IS COMPUTED FROM H1, ANGLE, AND RANGE ASSUMING NO REFRACTION

SLANT PATH PARAMETERS IN STANDARD FORM

H1 = .005 KM
H2 = .007 KM
ANGLE = 89.900 DEG
PHI = 90.108 DEG
HMIN = .005 KM
LEN = 0

1CALCULATION OF THE REFRACTED PATH THROUGH THE ATMOSPHERE

I	ALTITUDE FROM (KM)	TO (KM)	THETA (DEG)	DRANGE (KM)	RANGE (KM)	DBETA (DEG)	BETA (DEG)	PHI (DEG)	DBEND (DEG)	BENDING (DEG)	(MB)	(K	
H1 TO H2													
1	.005	.007	89.900	1.013	1.013	.010	.010	90.108	.001	.001	1007.785	277.04	1.27E-03

CUMULATIVE ABSORBER AMOUNTS FOR THE PATH FROM H1 TO Z

J	Z (KM)	TBAR (K)	HNO3 (ATM CM)	O3 UV (ATM CM)	CNTMSLF1 (MOL CM-2)	CNTMSLF2 (MOL CM-2)	CNTMFRN (MOL CM-2)	O2 (MOL CM-2)
1	.007	277.04	4.973E-06	1.791E-03	1.022E+20	5.383E+19	1.693E+22	3.764E+04

J	Z (KM)	N2 CONT	MOL SCAT	AER 1	AER 2	AER 3	AER 4	CIRRUS
1	.007	7.663E-01	9.935E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

J	Z (KM)	H2O (G/CM**2)	O3	CO2	CO	CH4	N2O	O2	NH3	NO	NO2	SC
			(				ATM CM				)	
1	.01	4.75E-01	1.75E-03	3.37E+01	1.47E-02	1.69E-01	3.13E-02	1.98E+04	5.01E-05	2.99E-05	2.28E-06	

0SUMMARY OF THE GEOMETRY CALCULATION

```
H1      =    .005 KM
H2      =    .007 KM
ANGLE   =   89.900 DEG
RANGE   =    1.013 KM
BETA    =    .010 DEG
PHI     =  90.108 DEG
HMIN    =    .005 KM
BENDING =    .001 DEG
LEN     =    0
```

EQUIVALENT SEA LEVEL TOTAL ABSORBER AMOUNTS

HNO3 (ATM CM)	O3 UV (ATM CM)	CNTMSLF1 (MOL CM-2)	CNTMSLF2 (MOL CM-2)	CNTMFRN (MOL CM-2)	(MOL CM-2)
4.973E-06	1.791E-03	1.022E+20	5.383E+19	1.693E+22	

N2 CONT	MOL SCAT	AER 1	AER 2	AER 3	AER 4	CIRRUS	MEAN (PRCNT)
7.663E-01	9.935E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	.00

H2O (G/CM**2)	O3	CO2	CO	CH4	N2O	O2
	(		ATM CM			)
4.746E-01	1.752E-03	3.371E+01	1.469E-02	1.691E-01	3.129E-02	1.977E+04

NH3	NO	NO2	SO2
(	ATM CM		)
5.008E-05	2.990E-05	2.281E-06	2.921E-05

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FREQ 1/CM	WAVELENGTH MICRONS	TOTAL TRANS	H2O TRANS	CO2+ TRANS	OZONE TRANS	TRACE TRANS	N2 CONT TRANS	H2O CONT TRANS	MOL SC TRANS			
710.	14.085	.1154	.8227	.1594	.9981	.9999	1.0000	.8818	1.0000	1.0000	1.0000	.0000
720.	13.889	.2419	.8949	.3047	.9979	.9999	1.0000	.8890	1.0000	1.0000	1.0000	.0000
730.	13.699	.3603	.8997	.4474	.9982	.9999	1.0000	.8968	1.0000	1.0000	1.0000	.0000
740.	13.514	.4365	.8732	.5536	.9986	.9998	1.0000	.9043	1.0000	1.0000	1.0000	.0000
750.	13.333	.5494	.8837	.6838	.9989	.9998	1.0000	.9103	1.0000	1.0000	1.0000	.0000
760.	13.158	.6918	.9198	.8226	.9992	.9997	1.0000	.9154	1.0000	1.0000	1.0000	.0000
770.	12.987	.7721	.9232	.9102	.9994	.9996	1.0000	.9199	1.0000	1.0000	1.0000	.0000
780.	12.821	.7944	.9069	.9487	.9996	.9995	1.0000	.9243	1.0000	1.0000	1.0000	.0000
790.	12.658	.7919	.8914	.9577	.9997	.9994	1.0000	.9284	1.0000	1.0000	1.0000	.0000
800.	12.500	.7987	.8868	.9670	.9998	.9994	1.0000	.9322	1.0000	1.0000	1.0000	.0000

810.	12.346	.8474	.9252	.9796	.9999	.9993	1.0000	.9357	1.0000	1.0000	1.0000	.0000	41
820.	12.195	.8914	.9610	.9886	.9999	.9992	1.0000	.9391	1.0000	1.0000	1.0000	.0000	42
830.	12.048	.9064	.9676	.9948	1.0000	.9992	1.0000	.9425	1.0000	1.0000	1.0000	.0000	43
840.	11.905	.9026	.9568	.9984	1.0000	.9993	1.0000	.9456	1.0000	1.0000	1.0000	.0000	44
850.	11.765	.8966	.9474	.9987	1.0000	.9993	1.0000	.9483	1.0000	1.0000	1.0000	.0000	45
860.	11.628	.9091	.9578	.9989	1.0000	.9993	1.0000	.9509	1.0000	1.0000	1.0000	.0000	46
870.	11.494	.9196	.9663	.9991	1.0000	.9994	1.0000	.9532	1.0000	1.0000	1.0000	.0000	4
880.	11.364	.9178	.9622	.9991	1.0000	.9995	1.0000	.9554	1.0000	1.0000	.9999	.0000	4
890.	11.236	.9241	.9672	.9985	1.0000	.9995	1.0000	.9575	1.0000	1.0000	.9999	.0000	4
900.	11.111	.9337	.9762	.9974	1.0000	.9996	1.0000	.9594	1.0000	1.0000	.9999	.0000	4
910.	10.989	.9308	.9729	.9960	1.0000	.9994	1.0000	.9612	1.0000	1.0000	1.0000	.0000	5
920.	10.870	.9290	.9721	.9942	1.0000	.9983	1.0000	.9629	1.0000	1.0000	1.0000	.0000	5
930.	10.753	.9350	.9807	.9911	1.0000	.9974	1.0000	.9644	1.0000	1.0000	1.0000	.0000	
940.	10.638	.9351	.9823	.9871	1.0000	.9985	1.0000	.9659	1.0000	1.0000	1.0000	.0000	
950.	10.526	.9315	.9776	.9863	1.0000	.9988	1.0000	.9672	1.0000	1.0000	1.0000	.0000	
960.	10.417	.9297	.9745	.9871	.9999	.9980	1.0000	.9685	1.0000	1.0000	1.0000	.0000	
970.	10.309	.9264	.9718	.9851	.9997	.9984	1.0000	.9696	1.0000	1.0000	1.0000	.0000	
980.	10.204	.9345	.9774	.9867	.9989	.9993	1.0000	.9707	1.0000	1.0000	1.0000	.0000	
990.	10.101	.9483	.9855	.9935	.9972	.9996	1.0000	.9716	1.0000	1.0000	1.0000	.0000	
1000.	10.000	.9454	.9814	.9978	.9933	.9994	1.0000	.9725	1.0000	1.0000	1.0000	.0000	
1010.	9.901	.9341	.9765	.9984	.9851	.9993	1.0000	.9733	1.0000	1.0000	1.0000	.0000	
1020.	9.804	.9209	.9744	.9967	.9742	.9992	1.0000	.9740	1.0000	1.0000	1.0000	.0000	
1030.	9.709	.9131	.9746	.9930	.9690	.9991	1.0000	.9746	1.0000	1.0000	1.0000	.0000	
1040.	9.615	.9105	.9775	.9876	.9683	.9989	1.0000	.9751	1.0000	1.0000	1.0000	.0000	
1050.	9.524	.9021	.9741	.9835	.9663	.9989	1.0000	.9756	1.0000	1.0000	1.0000	.0000	
1060.	9.434	.9063	.9673	.9823	.9784	.9990	1.0000	.9760	1.0000	1.0000	1.0000	.0000	
1070.	9.346	.9204	.9684	.9796	.9950	.9989	1.0000	.9762	1.0000	1.0000	1.0000	.0000	
1080.	9.259	.9276	.9733	.9791	.9981	.9989	1.0000	.9763	1.0000	1.0000	1.0000	.0000	
1090.	9.174	.9316	.9682	.9878	.9986	.9990	1.0000	.9764	1.0000	1.0000	1.0000	.0000	
1100.	9.091	.9248	.9530	.9960	.9988	.9991	1.0000	.9764	1.0000	1.0000	1.0000	.0000	
1110.	9.009	.9195	.9451	.9987	.9988	.9992	1.0000	.9761	1.0000	1.0000	1.0000	.0000	
1120.	8.929	.9217	.9489	.9975	.9986	.9992	1.0000	.9760	1.0000	1.0000	1.0000	.0000	
1130.	8.850	.9174	.9482	.9937	.9986	.9993	1.0000	.9757	1.0000	1.0000	1.0000	.0000	
1140.	8.772	.9026	.9388	.9875	.9989	.9994	1.0000	.9752	1.0000	1.0000	1.0000	.0000	
1150.	8.696	.8939	.9355	.9820	.9992	.9995	1.0000	.9744	1.0000	1.0000	1.0000	.0000	
1160.	8.621	.8855	.9279	.9814	.9994	.9995	1.0000	.9735	1.0000	1.0000	1.0000	.0000	
1170.	8.547	.8605	.9022	.9813	.9996	.9996	1.0000	.9727	1.0000	1.0000	1.0000	.0000	
1180.	8.475	.8420	.8861	.9788	.9997	.9997	1.0000	.9714	1.0000	1.0000	1.0000	.0000	
1190.	8.403	.8441	.8898	.9789	.9998	.9998	1.0000	.9694	1.0000	1.0000	1.0000	.0000	
1200.	8.333	.8376	.8839	.9801	.9999	.9999	1.0000	.9672	1.0000	1.0000	1.0000	.0000	

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FREQ	WAVELENGTH	TOTAL	H2O	CO2+	OZONE	TRACE	N2 CONT	H2O CONT	MOL SC			
1/CM	MICRONS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS			
1210.	8.264	.7908	.8410	.9744	1.0000	.9999	1.0000	.9652	1.0000	1.0000	1.0000	.0000
1220.	8.197	.7556	.8177	.9613	1.0000	.9999	1.0000	.9614	1.0000	1.0000	1.0000	.0000
1230.	8.130	.7551	.8393	.9417	1.0000	1.0000	1.0000	.9555	1.0000	1.0000	1.0000	.0000
1240.	8.065	.7083	.8234	.9096	1.0000	1.0000	1.0000	.9458	1.0000	1.0000	1.0000	.000
1250.	8.000	.6067	.7522	.8619	1.0000	1.0000	1.0000	.9358	1.0000	1.0000	1.0000	.000
1260.	7.937	.4598	.6271	.7929	1.0000	1.0000	1.0000	.9248	1.0000	1.0000	1.0000	.000
1270.	7.874	.3792	.5632	.7401	1.0000	1.0000	1.0000	.9097	1.0000	1.0000	1.0000	.000
1280.	7.813	.3964	.6048	.7390	1.0000	1.0000	1.0000	.8871	1.0000	1.0000	1.0000	.000

1290.	7.752	.3847	.6414	.7071	1.0000	1.0000	1.0000	.8483	1.0000	1.0000	1.0000	.0000	113.5
1300.	7.692	.3376	.6203	.6722	1.0000	1.0000	1.0000	.8099	1.0000	1.0000	.9999	.0000	120.1
310.	7.634	.2524	.4311	.7786	1.0000	1.0000	1.0000	.7519	1.0000	1.0000	.9999	.0000	127.
1320.	7.576	.1723	.2863	.8761	1.0000	1.0000	1.0000	.6871	1.0000	1.0000	.9999	.0000	135.
1330.	7.519	.1541	.2840	.8851	1.0000	.9997	1.0000	.6134	1.0000	1.0000	.9999	.0000	144.
1340.	7.463	.1092	.2473	.8598	1.0000	.9991	1.0000	.5139	1.0000	1.0000	.9999	.0000	153.
1350.	7.407	.0745	.2075	.8509	1.0000	.9987	1.0000	.4224	1.0000	1.0000	1.0000	.0000	162.
1360.	7.353	.0351	.1216	.8752	1.0000	.9987	1.0000	.3307	1.0000	1.0000	1.0000	.0000	172.
1370.	7.299	.0128	.0594	.9192	1.0000	.9986	1.0000	.2351	1.0000	1.0000	1.0000	.0000	182.
1380.	7.246	.0073	.0440	.9550	1.0000	.9990	1.0000	.1729	1.0000	1.0000	1.0000	.0000	192.
1390.	7.194	.0022	.0188	.9776	1.0000	.9997	1.0000	.1183	1.0000	1.0000	1.0000	.0000	202.
1400.	7.143	.0010	.0135	.9887	1.0000	1.0000	1.0000	.0764	1.0000	1.0000	1.0000	.0000	211
1410.	7.092	.0008	.0169	.9917	1.0000	1.0000	1.0000	.0471	1.0000	1.0000	1.0000	.0000	221
1420.	7.042	.0002	.0055	.9910	1.0000	1.0000	1.0000	.0292	1.0000	1.0000	1.0000	.0000	231
1430.	6.993	.0000	.0034	.9861	1.0000	1.0000	1.0000	.0141	1.0000	1.0000	1.0000	.0000	241
1440.	6.944	.0000	.0066	.9765	1.0000	1.0000	1.0000	.0069	1.0000	1.0000	1.0000	.0000	251
1450.	6.897	.0000	.0020	.9711	1.0000	.9999	1.0000	.0036	1.0000	1.0000	1.0000	.0000	261
1460.	6.849	.0000	.0001	.9658	1.0000	.9999	1.0000	.0020	1.0000	1.0000	1.0000	.0000	271
1470.	6.803	.0000	.0001	.9612	1.0000	.9999	1.0000	.0008	1.0000	1.0000	1.0000	.0000	281
1480.	6.757	.0000	.0004	.9584	1.0000	.9998	1.0000	.0002	1.0000	1.0000	1.0000	.0000	291
1490.	6.711	.0000	.0000	.9555	1.0000	.9998	1.0000	.0001	1.0000	1.0000	1.0000	.0000	301
1500.	6.667	.0000	.0000	.9505	1.0000	.9997	1.0000	.0000	1.0000	1.0000	1.0000	.0000	311
1510.	6.623	.0000	.0000	.9485	1.0000	.9996	1.0000	.0000	1.0000	1.0000	1.0000	.0000	321
1520.	6.579	.0000	.0000	.9385	1.0000	.9996	1.0000	.0000	1.0000	1.0000	1.0000	.0000	33
1530.	6.536	.0000	.0000	.9201	1.0000	.9995	1.0000	.0000	1.0000	1.0000	1.0000	.0000	34
1540.	6.494	.0000	.0000	.8934	1.0000	.9995	1.0000	.0000	1.0000	1.0000	1.0000	.0000	35
1550.	6.452	.0000	.0000	.8916	1.0000	.9995	1.0000	.0000	1.0000	1.0000	1.0000	.0000	36
1560.	6.410	.0000	.0000	.9044	1.0000	.9995	1.0000	.0000	1.0000	1.0000	1.0000	.0000	37
1570.	6.369	.0000	.0000	.9165	1.0000	.9995	1.0000	.0000	1.0000	1.0000	1.0000	.0000	38
1580.	6.329	.0000	.0070	.9227	1.0000	.9994	1.0000	.0001	1.0000	1.0000	1.0000	.0000	39
1590.	6.289	.0000	.0443	.9266	1.0000	.9992	1.0000	.0003	1.0000	1.0000	1.0000	.0000	4C
1600.	6.250	.0000	.0291	.9249	1.0000	.9990	1.0000	.0007	1.0000	1.0000	1.0000	.0000	41
1610.	6.211	.0000	.0018	.9253	1.0000	.9987	1.0000	.0008	1.0000	1.0000	1.0000	.0000	4
1620.	6.173	.0000	.0000	.9289	1.0000	.9981	1.0000	.0003	1.0000	1.0000	1.0000	.0000	4
1630.	6.135	.0000	.0000	.9349	1.0000	.9979	1.0000	.0001	1.0000	1.0000	1.0000	.0000	4
1640.	6.098	.0000	.0000	.9420	1.0000	.9984	1.0000	.0000	1.0000	1.0000	1.0000	.0000	4
1650.	6.061	.0000	.0000	.9497	1.0000	.9989	1.0000	.0000	1.0000	1.0000	1.0000	.0000	4
1660.	6.024	.0000	.0000	.9578	1.0000	.9993	1.0000	.0000	1.0000	1.0000	1.0000	.0000	4
1670.	5.988	.0000	.0000	.9666	1.0000	.9995	1.0000	.0000	1.0000	1.0000	1.0000	.0000	4
1680.	5.952	.0000	.0000	.9744	1.0000	.9996	1.0000	.0000	1.0000	1.0000	1.0000	.0000	4
1690.	5.917	.0000	.0000	.9802	.9999	.9995	1.0000	.0000	1.0000	1.0000	.9999	.0000	5
1700.	5.882	.0000	.0000	.9829	.9998	.9995	1.0000	.0000	1.0000	1.0000	.9999	.0000	5

FREQ	WAVELENGTH	TOTAL	H2O	CO2+	OZONE	TRACE	N2 CONT	H2O CONT	MOL SCAT			
1/CM	MICRONS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS	TI		
1710.	5.848	.0000	.0000	.9850	.9998	.9994	1.0000	.0000	1.0000	1.0000	.9999	.0000
1720.	5.814	.0000	.0000	.9881	.9997	.9994	1.0000	.0000	1.0000	1.0000	.9999	.0000
1730.	5.780	.0000	.0000	.9942	.9997	.9994	1.0000	.0002	1.0000	1.0000	.9999	.0000
1740.	5.747	.0000	.0000	.9985	.9997	.9993	1.0000	.0006	1.0000	1.0000	1.0000	.0000
1750.	5.714	.0000	.0000	.9993	.9998	.9994	1.0000	.0015	1.0000	1.0000	1.0000	.0000
1760.	5.682	.0000	.0001	.9997	.9999	.9995	1.0000	.0029	1.0000	1.0000	1.0000	.0000
1770.	5.650	.0000	.0002	.9999	.9999	.9995	1.0000	.0072	1.0000	1.0000	1.0000	.0000
1780.	5.618	.0000	.0005	1.0000	.9999	.9996	1.0000	.0152	1.0000	1.0000	1.0000	.0000
1790.	5.587	.0000	.0010	1.0000	.9999	.9996	1.0000	.0272	1.0000	1.0000	1.0000	.0000
1800.	5.556	.0002	.0037	1.0000	.9999	.9996	1.0000	.0425	1.0000	1.0000	1.0000	.0000
1810.	5.525	.0021	.0302	1.0000	.9999	.9996	1.0000	.0700	1.0000	1.0000	1.0000	.0000
1820.	5.495	.0041	.0453	.9999	.9999	.9996	1.0000	.0905	1.0000	1.0000	1.0000	.0000
1830.	5.464	.0019	.0140	.9998	.9999	.9996	1.0000	.1382	1.0000	1.0000	1.0000	.0000

1840.	5.435	.0031	.0183	.9992	1.0000	.9995	1.0000	.1692	1.0000	1.0000	1.0000	.0000	6
1850.	5.405	.0166	.0870	.9978	1.0000	.9995	1.0000	.1912	1.0000	1.0000	1.0000	.0000	6
1860.	5.376	.0315	.1299	.9962	1.0000	.9995	1.0000	.2438	1.0000	1.0000	1.0000	.0000	(
1870.	5.348	.0446	.1546	.9941	1.0000	.9996	1.0000	.2904	1.0000	1.0000	1.0000	.0000	(
1880.	5.319	.0779	.2060	.9906	1.0000	.9996	1.0000	.3817	1.0000	1.0000	1.0000	.0000	(
1890.	5.291	.0847	.2064	.9834	1.0000	.9995	1.0000	.4176	1.0000	1.0000	1.0000	.0000	(
1900.	5.263	.0963	.2090	.9699	1.0000	.9994	1.0000	.4752	1.0000	1.0000	1.0000	.0000	
1910.	5.236	.0808	.1600	.9560	1.0000	.9995	1.0000	.5286	1.0000	1.0000	1.0000	.0000	
1920.	5.208	.1019	.1890	.9545	1.0000	.9996	1.0000	.5653	1.0000	1.0000	1.0000	.0000	
1930.	5.181	.2030	.3435	.9678	1.0000	.9997	1.0000	.6109	1.0000	1.0000	1.0000	.0000	
1940.	5.155	.2254	.3554	.9839	1.0000	.9999	1.0000	.6446	1.0000	1.0000	1.0000	.0000	
1950.	5.128	.2515	.3613	.9907	1.0000	.9999	1.0000	.7027	1.0000	1.0000	1.0000	.0000	
1960.	5.102	.3383	.4522	.9913	1.0000	1.0000	1.0000	.7547	1.0000	1.0000	1.0000	.0000	
1970.	5.076	.4528	.5821	.9931	1.0000	1.0000	1.0000	.7833	1.0000	1.0000	1.0000	.0000	
1980.	5.051	.5107	.6200	.9965	1.0000	1.0000	1.0000	.8267	1.0000	1.0000	1.0000	.0000	
1990.	5.025	.4587	.5419	.9981	1.0000	1.0000	1.0000	.8482	1.0000	1.0000	1.0000	.0000	
2000.	5.000	.5014	.5768	.9973	1.0000	1.0000	1.0000	.8717	1.0000	1.0000	1.0000	.0000	
2010.	4.975	.5452	.6178	.9947	.9999	1.0000	1.0000	.8872	1.0000	1.0000	1.0000	.0000	
2020.	4.950	.5693	.6363	.9903	.9999	1.0000	1.0000	.9036	1.0000	1.0000	1.0000	.0000	
2030.	4.926	.6425	.7095	.9805	.9999	1.0000	1.0000	.9238	1.0000	1.0000	1.0000	.0000	
2040.	4.902	.6749	.7550	.9580	.9998	1.0000	1.0000	.9333	1.0000	1.0000	1.0000	.0000	
2050.	4.878	.6870	.7892	.9201	.9997	1.0000	1.0000	.9464	1.0000	1.0000	1.0000	.0000	
2060.	4.854	.6653	.7864	.8862	.9994	1.0000	1.0000	.9552	1.0000	1.0000	1.0000	.0000	
2070.	4.831	.6607	.7864	.8751	.9987	1.0000	1.0000	.9613	1.0000	1.0000	1.0000	.0000	
2080.	4.808	.6968	.8070	.8950	.9977	1.0000	.9998	.9671	1.0000	1.0000	1.0000	.0000	
2090.	4.785	.7307	.8176	.9243	.9966	1.0000	.9996	.9705	1.0000	1.0000	1.0000	.0000	
2100.	4.762	.7691	.8490	.9330	.9961	1.0000	.9993	.9754	1.0000	1.0000	1.0000	.0000	
2110.	4.739	.7917	.8723	.9326	.9959	1.0000	.9990	.9782	1.0000	1.0000	1.0000	.0000	
2120.	4.717	.8064	.8829	.9369	.9959	1.0000	.9983	.9807	1.0000	1.0000	1.0000	.0000	
2130.	4.695	.8181	.8850	.9451	.9980	1.0000	.9974	.9826	1.0000	1.0000	1.0000	.0000	
2140.	4.673	.8189	.8717	.9592	.9995	1.0000	.9958	.9839	1.0000	1.0000	1.0000	.0000	
2150.	4.651	.8233	.8807	.9555	.9999	1.0000	.9931	.9852	1.0000	1.0000	1.0000	.0000	
2160.	4.630	.8274	.9094	.9324	.9999	1.0000	.9896	.9861	1.0000	1.0000	1.0000	.0000	
2170.	4.608	.8111	.9318	.8953	.9999	1.0000	.9851	.9871	1.0000	1.0000	1.0000	.0000	
2180.	4.587	.7579	.9401	.8311	.9999	1.0000	.9821	.9879	1.0000	1.0000	1.0000	.0000	
2190.	4.566	.6604	.9436	.7241	.9999	1.0000	.9780	.9885	1.0000	1.0000	1.0000	.0000	
2200.	4.545	.5397	.9417	.5949	.9999	1.0000	.9743	.9889	1.0000	1.0000	1.0000	.0000	

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FREQ	WAVELENGTH	TOTAL	H2O	CO2+	OZONE	TRACE	N2 CONT	H2O CONT	MOL S			
1/CM	MICRONS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS			
2210.	4.525	.4631	.9348	.5161	.9999	1.0000	.9704	.9893	1.0000	1.0000	1.0000	.000(
2220.	4.505	.4274	.9426	.4747	.9999	1.0000	.9654	.9896	1.0000	1.0000	1.0000	.000(
2230.	4.484	.3351	.9518	.3705	.9999	1.0000	.9602	.9898	1.0000	1.0000	1.0000	.000(
2240.	4.464	.2420	.9482	.2699	1.0000	1.0000	.9551	.9900	1.0000	1.0000	1.0000	.000
2250.	4.444	.1806	.9438	.2032	1.0000	1.0000	.9507	.9902	1.0000	1.0000	1.0000	.000
2260.	4.425	.1034	.9506	.1161	1.0000	1.0000	.9465	.9904	1.0000	1.0000	1.0000	.00(
2270.	4.405	.0578	.9606	.0644	1.0000	1.0000	.9434	.9906	1.0000	1.0000	1.0000	.00(
2280.	4.386	.0280	.9648	.0312	1.0000	1.0000	.9400	.9908	1.0000	1.0000	1.0000	.00(
2290.	4.367	.0045	.9689	.0050	1.0000	1.0000	.9355	.9910	1.0000	1.0000	1.0000	.00
2300.	4.348	.0001	.9750	.0001	1.0000	1.0000	.9294	.9912	1.0000	1.0000	1.0000	.00
2310.	4.329	.0000	.9799	.0000	1.0000	1.0000	.9121	.9913	1.0000	1.0000	1.0000	.00
2320.	4.310	.0000	.9826	.0000	1.0000	1.0000	.8900	.9915	1.0000	1.0000	1.0000	.00
2330.	4.292	.0000	.9853	.0000	1.0000	1.0000	.8785	.9916	1.0000	1.0000	1.0000	.0(
2340.	4.274	.0000	.9891	.0000	1.0000	1.0000	.8907	.9917	1.0000	1.0000	1.0000	.0(
2350.	4.255	.0000	.9920	.0000	1.0000	1.0000	.9100	.9918	1.0000	1.0000	1.0000	.0(
2360.	4.237	.0000	.9934	.0000	1.0000	1.0000	.9149	.9919	1.0000	1.0000	1.0000	.0
2370.	4.219	.0000	.9938	.0000	1.0000	1.0000	.9178	.9919	1.0000	1.0000	1.0000	.0
2380.	4.202	.0002	.9943	.0002	1.0000	1.0000	.9185	.9920	1.0000	1.0000	1.0000	.0

2390.	4.184	.2735	.9951	.3018	1.0000	1.0000	.9178	.9921	1.0000	1.0000	1.0000	.0000	1002.
2400.	4.167	.7492	.9955	.8272	1.0000	1.0000	.9170	.9921	1.0000	1.0000	1.0000	.0000	1005.
2410.	4.149	.8077	.9961	.8885	1.0000	1.0000	.9199	.9922	1.0000	1.0000	1.0000	.0000	1007.
420.	4.132	.8413	.9964	.9201	1.0000	1.0000	.9248	.9922	1.0000	1.0000	1.0000	.0000	1008.
2430.	4.115	.8613	.9966	.9368	1.0000	1.0000	.9298	.9922	1.0000	1.0000	1.0000	.0000	1010.
2440.	4.098	.8758	.9974	.9456	1.0000	1.0000	.9359	.9923	1.0000	1.0000	1.0000	.0000	1011.
2450.	4.082	.8921	.9981	.9552	1.0000	1.0000	.9431	.9923	1.0000	1.0000	1.0000	.0000	1012.
2460.	4.065	.9089	.9977	.9649	1.0000	1.0000	.9514	.9923	1.0000	1.0000	1.0000	.0000	1013.
2470.	4.049	.9196	.9975	.9690	1.0000	1.0000	.9587	.9924	1.0000	1.0000	1.0000	.0000	1014.
2480.	4.032	.9309	.9974	.9735	1.0000	1.0000	.9661	.9924	1.0000	1.0000	1.0000	.0000	1015.
2490.	4.016	.9438	.9970	.9817	1.0000	1.0000	.9717	.9924	1.0000	1.0000	1.0000	.0000	1015.
2500.	4.000	.9537	.9963	.9878	1.0000	1.0000	.9765	.9925	1.0000	1.0000	1.0000	.0000	1016.
2510.	3.984	.9585	.9953	.9892	1.0000	1.0000	.9810	.9925	1.0000	1.0000	1.0000	.0000	1016.
2520.	3.968	.9590	.9937	.9871	1.0000	1.0000	.9852	.9925	1.0000	1.0000	1.0000	.0000	1016.
2530.	3.953	.9526	.9916	.9798	1.0000	1.0000	.9878	.9925	1.0000	1.0000	1.0000	.0000	1017.
2540.	3.937	.9415	.9892	.9679	1.0000	1.0000	.9908	.9925	1.0000	1.0000	1.0000	.0000	1018.
2550.	3.922	.9320	.9855	.9599	1.0000	1.0000	.9927	.9925	1.0000	1.0000	1.0000	.0000	1018.
2560.	3.906	.9275	.9815	.9581	1.0000	1.0000	.9939	.9924	1.0000	1.0000	1.0000	.0000	1019.
2570.	3.891	.9193	.9759	.9539	1.0000	1.0000	.9950	.9924	1.0000	1.0000	1.0000	.0000	1020.
2580.	3.876	.9132	.9680	.9547	1.0000	1.0000	.9958	.9924	1.0000	1.0000	1.0000	.0000	1021.
2590.	3.861	.9190	.9612	.9665	1.0000	1.0000	.9969	.9923	1.0000	1.0000	1.0000	.0000	1021.
2600.	3.846	.9268	.9573	.9784	1.0000	1.0000	.9973	.9922	1.0000	1.0000	1.0000	.0000	1022.
2610.	3.831	.9272	.9493	.9864	1.0000	1.0000	.9981	.9921	1.0000	1.0000	1.0000	.0000	1023.
2620.	3.817	.9211	.9408	.9884	1.0000	1.0000	.9985	.9920	1.0000	1.0000	1.0000	.0000	1024.
2630.	3.802	.9138	.9351	.9864	1.0000	1.0000	.9987	.9920	1.0000	1.0000	1.0000	.0000	1025.
2640.	3.788	.9038	.9248	.9864	1.0000	1.0000	.9989	.9919	1.0000	1.0000	1.0000	.0000	1025.
2650.	3.774	.8963	.9151	.9887	1.0000	1.0000	.9988	.9919	1.0000	1.0000	1.0000	.0000	1027.
2660.	3.759	.8966	.9138	.9903	1.0000	1.0000	.9989	.9919	1.0000	1.0000	1.0000	.0000	1028.
2670.	3.745	.9028	.9211	.9891	1.0000	1.0000	.9990	.9919	1.0000	1.0000	1.0000	.0000	1029.
2680.	3.731	.9069	.9271	.9870	1.0000	1.0000	.9993	.9919	1.0000	1.0000	1.0000	.0000	1029.
2690.	3.717	.9137	.9341	.9867	1.0000	1.0000	.9995	.9918	1.0000	1.0000	1.0000	.0000	1030.
2700.	3.704	.9125	.9326	.9869	1.0000	1.0000	.9997	.9918	1.0000	1.0000	1.0000	.0000	1031

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FREQ 1/CM	WAVELENGTH MICRONS	TOTAL TRANS	H2O TRANS	CO2+ TRANS	OZONE TRANS	TRACE TRANS	N2 CONT TRANS	H2O CONT TRANS	MOL SCAT TRANS	A TRAN			
2710.	3.690	.8731	.8921	.9870	1.0000	1.0000	.9998	.9918	1.0000	1.0000	1.0000	.0000	1032
2720.	3.676	.8372	.8548	.9876	1.0000	1.0000	.9999	.9918	1.0000	1.0000	1.0000	.0000	1034
2730.	3.663	.8766	.8967	.9858	1.0000	1.0000	.9999	.9918	1.0000	1.0000	1.0000	.0000	1035
2740.	3.650	.9080	.9319	.9826	1.0000	1.0000	.9999	.9918	1.0000	1.0000	1.0000	.0000	1036
2750.	3.636	.9065	.9312	.9815	1.0000	1.0000	1.0000	.9918	1.0000	1.0000	1.0000	.0000	1037
2760.	3.623	.8944	.9207	.9795	1.0000	1.0000	1.0000	.9918	1.0000	1.0000	1.0000	.0000	103
2770.	3.610	.8778	.9084	.9742	1.0000	1.0000	1.0000	.9918	1.0000	1.0000	1.0000	.0000	103
2780.	3.597	.8616	.8983	.9672	1.0000	1.0000	1.0000	.9918	1.0000	1.0000	1.0000	.0000	1041
2790.	3.584	.8481	.8896	.9613	1.0000	1.0000	1.0000	.9917	1.0000	1.0000	1.0000	.0000	104
2800.	3.571	.8458	.8861	.9625	1.0000	1.0000	1.0000	.9917	1.0000	1.0000	1.0000	.0000	104
2810.	3.559	.8479	.8873	.9635	1.0000	1.0000	1.0000	.9918	1.0000	1.0000	1.0000	.0000	104
2820.	3.546	.8455	.8897	.9580	1.0000	1.0000	1.0000	.9919	1.0000	1.0000	1.0000	.0000	104
2830.	3.534	.8570	.8984	.9616	1.0000	1.0000	1.0000	.9920	1.0000	1.0000	1.0000	.0000	104
2840.	3.521	.8785	.9106	.9725	1.0000	1.0000	1.0000	.9920	1.0000	1.0000	1.0000	.0000	105
2850.	3.509	.8913	.9236	.9727	1.0000	1.0000	1.0000	.9921	1.0000	1.0000	1.0000	.0000	105
2860.	3.497	.8911	.9340	.9618	1.0000	1.0000	1.0000	.9921	1.0000	1.0000	1.0000	.0000	105.
2870.	3.484	.8857	.9386	.9513	1.0000	1.0000	1.0000	.9920	1.0000	1.0000	1.0000	.0000	105
2880.	3.472	.8847	.9396	.9493	1.0000	1.0000	1.0000	.9919	1.0000	1.0000	1.0000	.0000	105
2890.	3.460	.8819	.9373	.9488	1.0000	.9999	1.0000	.9917	1.0000	1.0000	1.0000	.0000	105
2900.	3.448	.8739	.9351	.9430	1.0000	.9999	1.0000	.9913	1.0000	1.0000	1.0000	.0000	105
2910.	3.436	.8721	.9408	.9360	1.0000	.9999	1.0000	.9905	1.0000	1.0000	1.0000	.0000	105
2920.	3.425	.8618	.9357	.9307	1.0000	.9999	1.0000	.9897	1.0000	1.0000	1.0000	.0000	105
2930.	3.413	.8305	.9064	.9270	1.0000	1.0000	1.0000	.9885	1.0000	1.0000	1.0000	.0000	106

2940.	3.401	.8132	.8931	.9229	1.0000	1.0000	1.0000	.9867	1.0000	1.0000	1.0000	.0000	1063.
2950.	3.390	.7998	.8841	.9194	.9999	1.0000	1.0000	.9840	1.0000	1.0000	1.0000	.0000	1065.
2960.	3.378	.7526	.8326	.9216	.9999	1.0000	1.0000	.9809	1.0000	1.0000	1.0000	.0000	1067.
2970.	3.367	.6886	.7598	.9275	.9999	1.0000	1.0000	.9773	1.0000	1.0000	1.0000	.0000	1070.
2980.	3.356	.6399	.7043	.9348	.9998	1.0000	1.0000	.9722	1.0000	1.0000	1.0000	.0000	1074.
2990.	3.344	.6372	.7038	.9380	.9997	1.0000	1.0000	.9655	1.0000	1.0000	1.0000	.0000	1078.
3000.	3.333	.6084	.6985	.9087	.9994	1.0000	1.0000	.9591	1.0000	1.0000	1.0000	.0000	1081.
3010.	3.322	.4949	.6378	.8156	.9993	1.0000	1.0000	.9520	1.0000	1.0000	1.0000	.0000	1087.
3020.	3.311	.4642	.5864	.8357	.9991	1.0000	1.0000	.9481	1.0000	1.0000	1.0000	.0000	1092.
3030.	3.300	.5269	.6023	.9300	.9990	1.0000	1.0000	.9415	1.0000	1.0000	1.0000	.0000	1097.
3040.	3.289	.6089	.6861	.9500	.9990	1.0000	1.0000	.9351	1.0000	1.0000	1.0000	.0000	1101.
3050.	3.279	.5707	.6516	.9402	.9991	1.0000	1.0000	.9324	1.0000	1.0000	1.0000	.0000	1105.
3060.	3.268	.4797	.5602	.9221	.9996	1.0000	1.0000	.9291	1.0000	1.0000	1.0000	.0000	1110.
3070.	3.257	.4794	.5715	.9070	.9998	1.0000	1.0000	.9251	1.0000	1.0000	1.0000	.0000	1115.
3080.	3.247	.4837	.5834	.9025	.9999	1.0000	1.0000	.9186	1.0000	1.0000	1.0000	.0000	1120.
3090.	3.236	.4379	.5282	.9087	.9999	1.0000	1.0000	.9124	1.0000	1.0000	1.0000	.0000	1126.
3100.	3.226	.3194	.3811	.9200	.9999	1.0000	1.0000	.9110	1.0000	1.0000	1.0000	.0000	1133.
3110.	3.215	.2382	.2810	.9286	.9999	1.0000	1.0000	.9130	1.0000	1.0000	1.0000	.0000	1140.
3120.	3.205	.2614	.3040	.9372	.9999	1.0000	1.0000	.9176	1.0000	1.0000	1.0000	.0000	1148.
3130.	3.195	.4420	.5037	.9478	.9999	1.0000	1.0000	.9259	1.0000	1.0000	1.0000	.0000	1153.
3140.	3.185	.6676	.7473	.9573	.9999	1.0000	1.0000	.9334	1.0000	1.0000	1.0000	.0000	1157.
3150.	3.175	.7739	.8507	.9669	.9999	1.0000	1.0000	.9410	1.0000	1.0000	1.0000	.0000	1159.
3160.	3.165	.7783	.8417	.9765	.9999	1.0000	1.0000	.9470	1.0000	1.0000	1.0000	.0000	1161.
3170.	3.155	.6579	.7047	.9841	.9999	1.0000	1.0000	.9489	1.0000	1.0000	1.0000	.0000	1165.
3180.	3.145	.5621	.6015	.9890	.9999	1.0000	1.0000	.9450	1.0000	1.0000	1.0000	.0000	1169.
3190.	3.135	.5740	.6185	.9916	.9999	1.0000	1.0000	.9360	1.0000	1.0000	1.0000	.0000	1173.
3200.	3.125	.5312	.5755	.9939	1.0000	1.0000	1.0000	.9288	1.0000	1.0000	1.0000	.0000	1178.

1

FREQ	WAVELENGTH	TOTAL	H2O	CO2+	OZONE	TRACE	N2 CONT	H2O CONT	MOL SCAT	AI			
1/CM	MICRONS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS	TRANS	TRAN			
3210.	3.115	.4303	.4672	.9966	1.0000	1.0000	1.0000	.9242	1.0000	1.0000	1.0000	.0000	1184
3220.	3.106	.3592	.3911	.9986	1.0000	1.0000	1.0000	.9196	1.0000	1.0000	1.0000	.0000	1190
3230.	3.096	.3476	.3790	.9995	1.0000	1.0000	1.0000	.9177	1.0000	1.0000	1.0000	.0000	1197
3240.	3.086	.3933	.4292	.9999	1.0000	1.0000	1.0000	.9164	1.0000	1.0000	1.0000	.0000	1203
3250.	3.077	.4393	.4792	1.0000	1.0000	1.0000	1.0000	.9168	1.0000	1.0000	1.0000	.0000	1208
3260.	3.067	.4263	.4639	.9999	1.0000	1.0000	1.0000	.9190	1.0000	1.0000	1.0000	.0000	1214
3270.	3.058	.3838	.4171	.9997	1.0000	1.0000	1.0000	.9204	1.0000	1.0000	1.0000	.0000	1220
3280.	3.049	.3619	.3919	.9996	1.0000	1.0000	1.0000	.9239	1.0000	1.0000	1.0000	.0000	1227
3290.	3.040	.4048	.4373	.9990	1.0000	1.0000	1.0000	.9266	1.0000	1.0000	1.0000	.0000	1232
3300.	3.030	.4646	.5016	.9972	1.0000	1.0000	1.0000	.9289	1.0000	1.0000	1.0000	.0000	1238
3310.	3.021	.4858	.5229	.9948	1.0000	1.0000	1.0000	.9339	1.0000	1.0000	1.0000	.0000	1243
3320.	3.012	.5233	.5617	.9940	1.0000	1.0000	1.0000	.9374	1.0000	1.0000	1.0000	.0000	1248
3330.	3.003	.5649	.6065	.9936	1.0000	1.0000	1.0000	.9374	1.0000	1.0000	1.0000	.0000	1250

0INTEGRATED ABSORPTION FROM 710 TO 3330 CM-1 = 1250.44 CM-1
AVERAGE TRANSMITTANCE = .5227

0 CARD 5 ***** 0

Number of Atmospheric Boundaries 17

Title: ADAK 20 FEB 92 00:00 ZULU

ALT (km)	P (mb)	T (C)	DewP RH	H2O Vap	Ozone	AHAZE	VIS HSV
.005	1007.900	3.900	.075.00	.000E+00	.000E+00	.000E+00	.000000
.411	958.300	.000	.089.00	.000E+00	.000E+00	.000E+00	.000000
.742	919.400	-2.700	.093.00	.000E+00	.000E+00	.000E+00	.000000
.773	915.800	-2.700	.093.00	.000E+00	.000E+00	.000E+00	.000000
.951	895.500	-2.600	.071.00	.000E+00	.000E+00	.000E+00	.000000
1.050	884.400	-3.200	.069.00	.000E+00	.000E+00	.000E+00	.000000
1.218	865.800	-1.100	.040.00	.000E+00	.000E+00	.000E+00	.000000
1.319	854.900	-.800	.023.00	.000E+00	.000E+00	.000E+00	.000000
1.452	840.800	.000	.032.00	.000E+00	.000E+00	.000E+00	.000000
1.481	837.700	.200	.029.00	.000E+00	.000E+00	.000E+00	.000000
1.550	830.600	.000	.028.00	.000E+00	.000E+00	.000E+00	.000000
1.626	822.700	-.300	.037.00	.000E+00	.000E+00	.000E+00	.000000
1.875	797.400	-1.300	.012.00	.000E+00	.000E+00	.000E+00	.000000
2.103	775.000	-2.000	.012.00	.000E+00	.000E+00	.000E+00	.000000
2.242	761.500	-3.000	.036.00	.000E+00	.000E+00	.000E+00	.000000
2.471	739.700	-5.100	.055.00	.000E+00	.000E+00	.000E+00	.000000
3.055	686.300	-9.900	.070.00	.000E+00	.000E+00	.000E+00	.000000

LOWTRAN6 Card #2c Screen

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The Electro–Optics Branch (Code 754) of the Naval Command, Control and Ocean Surveillance Center (NCCOSC) RDT&E Division has been assigned by NAVSEA under the Photonics Mast Program to conduct experiments to compare the performance of 3- to 5-micron and 8- to 14-micron FLIR systems in typical submarine periscope-imaging environments. This report evaluates the performance of each FLIR system based on atmospheric transmittance measurements in both bands and Minimum Resolvable Temperature (MRT) tests in two extreme weather environments (low and high precipitable water content).

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